

BUTANE-PROPANE

News



No. 12

MAY 1940

25c

JOHN C. CURRAN

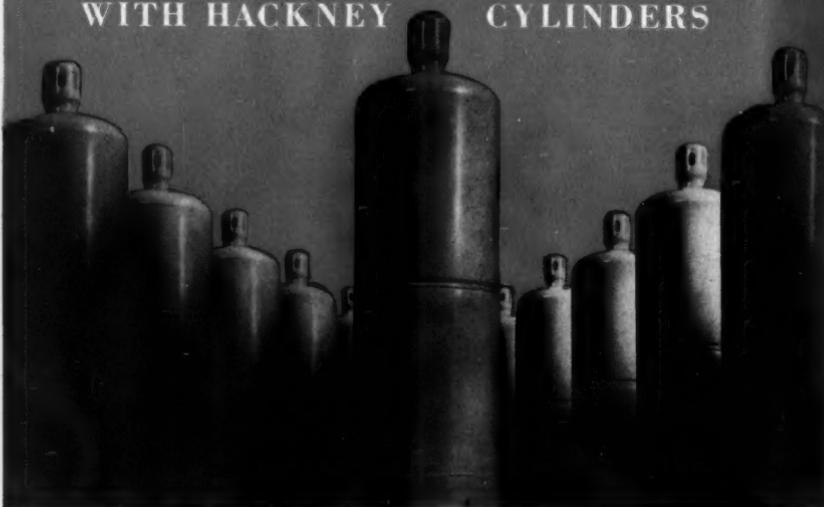
IN THIS ISSUE

BUTANE-AIR REPLACES NATURAL GAS (Page 9)

LPG STANDS BY AT CORNING (Page 11)

ENGINE CONVERSIONS (Page 16)

DEPENDABILITY IS ASSURED WITH HACKNEY CYLINDERS



WHEN you use Hackney cylinders you are assured of absolute dependability—minimum seam area—single circumferential butt-weld made by the Hackney process—X-Ray control of welding procedure—heat treatment of completed cylinder. You get maximum strength, minimum weight and uniform capacity. These advantages explain why hundreds of users standardize on Hackney cylinders.

More than 35 years' experi-

ence in designing and manufacturing cylinders strictly for compressed gases accounts for Hackney's ample engineering and production facilities—complete understanding of the characteristics of gases and intimate knowledge of metals. A Hackney engineer can help you determine the most practical and economical container for your needs. Where requirements are special, he will help you design and develop a container to meet them exactly. There is no obligation.



P R E S S E D S T E E L T A N K C O M P A N Y

208 S. La Salle Street, Room 1219, Chicago •
695 Roosevelt Building, Los Angeles

1399 Vanderbilt Concourse Building, New York
• 1487 S. 66th Street, Milwaukee

Containers for Gases, Liquids and Solids



This mark sells . . .

CITY FEATURES *beyond the Mains!*

Those customers of yours who live "beyond the mains" want the same features found in ranges built for "city" gas.

That's what Florence gives you to sell!—the same modern gleaming beauty, the same convenience features that have made Florence famous for easier, surer cooking—the same ranges, *built and tested for bottled gas, at the factory*. They reach you ready to hook up and use with the bottled gas you sell.

Florence gives you "city features" to sell!—in ten outstanding models for Propane and Butane Gas, all approved by the American Gas Association. You'll find wide acceptance for this line, backed by national advertising and complete dealer helps.

Write today for your copy of the new Florence Gas Range Catalog, and for full information on our new liberal Promotion Plan for Dealers.

FLORENCE STOVE COMPANY *General Offices and Plant: Gardner, Mass.; Western Offices and Plant: Kankakee, Ill.; Sales Offices: 1458 Merchandise Mart, Chicago; 45 E. 17th Street, New York; 53 Alabama Street, S.W., Atlanta; 301 N. Market Street, Dallas; and 2730 16th Street, San Francisco.*

FLORENCE BOTTLED GAS RANGES

BACKED BY OVER 65 YEARS' EXPERIENCE

NOTE! Also ask about the famous Florence "Dual-Oven" Combination Ranges for Oil and Bottled Gas!

BUTANE-PROPANE *News*

MAY
1940

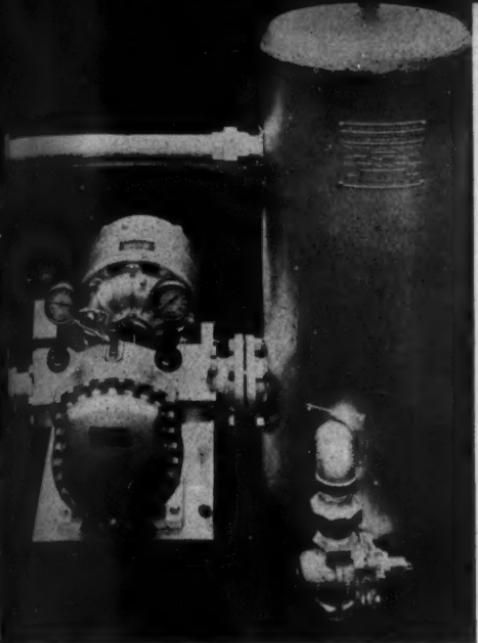
Contents for May, 1940

LETTERS	4
MAINLY BEYOND THE MAINS	7
BUTANE-AIR REPLACES NATURAL GAS	9
LPG STANDS BY AT CORNING	11
THE "4 BIG JOBS" FOR \$9.88 A MONTH	15
ENGINE CONVERSIONS	16
A.G.A. LABORATORIES NOW TEST HEATING APPLIANCES	16
	21
LPG SOLVES A FUEL PROBLEM	25
PACIFIC COAST SECTION MEETING	28
IF PROSPECTS WON'T COME TO MOHAMMED	31
N.G.A.A. CONVENTION MAY 15-17	33
BIRMINGHAM MEETING OF SOUTHERN SECTION	35
WARMING THE DESERT WITH BUTANE	37
SELLING	38
NEW SAFETY CODE FOR OKLAHOMA	41
NEW LOUISIANA DEALER GROUP MEETS IN FIRST CONVENTION	44
A MANUEL FOR MR. AVERAGE SALESMAN	48
BOTTLED GAS WONDERLAND	60
ANY FUEL WILL DO	64
WILDCATTING WITH LPG	76
PRODUCTS	78
RESEARCH	86
THE WHYS OF THE SAFETY CODE	88

Publication Office: LOS ANGELES, 1709 West Eighth Street, DRexel 4337.
Branches: NEW YORK, 381 Fourth Avenue, MURRAY Hill 4-0698; DALLAS, 3645 Haynie Avenue, Phone 58-1764; CHICAGO, 1064 Peoples Gas Bldg., HARRISON 6634.

May, 1940. Volume 2, Number 5. BUTANE-PROPANE News is published monthly, copyright 1940, by Western Business Papers, Inc., at 1709 West Eighth Street, Los Angeles, California. JAY JENKINS, President and General Manager; CRAIG ESPY, Vice President; JAMES E. JENKINS, Secretary-Treasurer; ARTHUR ROHMAN, Editor; LYNN C. DENNY, Managing Editor; ELLIOTT TAYLOR, Eastern Editor; PAUL LADY, Assistant Editor; WILLIAM C. COPP, Promotion Manager. Subscription price: United States, Canada, Mexico and Central American countries (in advance), 25 cents the copy, one year for \$1.50, three years for \$2.50; all other countries, \$3.00 per year. Entered as second-class matter May 29, 1939, at the post office at Los Angeles, California, under the Act of March 3, 1879.

PUBLISHERS: GAS, The Natural Gas Magazine; HANDBOOK BUTANE-PROPANE GAS



P-W PRESENTS L. P. G. "PACKAGE" PUMPING UNITS!

Parkhill-Wade, one of America's foremost L.P.G. engineering concerns backed by years of intimate experience with L.P.G. Storage, Handling and Dispensing problems, now present a line of matched, streamlined package dispensing and pumping units specifically designed to meet the industry's needs!

Last month we announced the P-W Dispenser and Metering Unit for accurate L.P.G. metering as a complete assembly ready for installation on delivery. As a matched companion unit, we now present as illustrated above, a complete Above-Ground Pumping Unit for Under-Ground Storage. Also delivered ready for immediate installation, this unit requires only 3 simple connections and it is ready for use. The unit is designed to assure instant fuel delivery when operated. Back drainage is eliminated when the unit is not in use; thus a constant column of liquid

is always available for immediate transfer. Soon we will present the third of this matched package line - a new-type Above-Ground Pumping Unit for Above-Ground Storage.

In the development of this patented package line of equipment, Parkhill-Wade presents matched units correctly engineered for their specific jobs, correctly designed with streamlined simplification a pronounced feature and sturdily built of materials and fittings of highest quality and adequate working pressure. These matched package units, because they definitely contribute to the efficiency and economy of your operations, merit your immediate investigation. Correspondence is invited. Prices and full details will be sent on request.



PARKHILL-WADE
CONSULTING AND
CONSTRUCTION ENGINEERS
1625 SOUTH ALAMEDA STREET

DISTRIBUTORS OF
LIQUID GAS EQUIPMENT & SUPPLIES

LETTERS

● **BUTANE-PROPANE News** welcomes communications from those identified with the liquefied petroleum gas industry, but readers will understand that this magazine does not necessarily concur in the personal opinions so expressed.—Editor.

Gentlemen:

This is in reply to your request of March 28 regarding research relative to corrosion of underground, steel tanks and protective measures for the satisfaction of safety.

We recognize that one of the most momentous projects ever to come before the butane gas industry of the South is the imperative need of Research and especially, research to gather data on the quality and condition of steel tanks, after they have been installed at two-foot depths over a period of time.

One of the "prime movers" for stimulating research is curiosity. It is to the curiosity and dissatisfaction of the leaders in the liquefied petroleum gas industry, that we owe the advancement and progress to this date. Curiosity will also stimulate the working out of satisfactory assurance of safety to cover the underground metal containers.

We herewith submit our recommendation for six new members, to be taken in, with full rights and privilege, to the Liquefied Petroleum Gas Association and the industry to wit:

"We have six honest, serving men. They will serve us till we die. Their names are WHO and WHAT and WHEN and HOW and WHERE and WHY."

W. P. THOMAS

Director of Gas Division
Louisiana Public Service Commission
Baton Rouge, Louisiana

Gentlemen:

Please send us your binder for those wonderful nuggets of gold that come in the mail every month under your trade name. Your magazine is the finest file that we have. Please keep up the good work.

As others have said before, we would like to hear of more experiences from the deep South. I think one of our greatest troubles is the lack of a common bonding among dealers in the interest of presenting a unified front to the public. At present there seems to be much confusion in the public's mind as to what is our industry. It would seem as if some worthy individuals would form an organization which would enable its members to keep in touch with one another so that we would come

to know that most of us aren't such bad eggs, and that there are only a few in the business just for the money, alone.

JAMES W. GORDON

Victoria Plumbing Company
Victoria, Texas

The Southern Section of the Liquefied Petroleum Gas Association performs the very function you desire. Its chairman is M. E. McKay, who may be addressed in care of the Southern Steel Co., San Antonio, Texas.—Ed.

Gentlemen:

We are subscribers to **BUTANE-PROPANE News**, plus owners of the Handbook Butane-Propane Gases, which we use as our operation Bible and we certainly appreciate the contents and suggestions of all the boys.

C. W. WILLIAMSON

Director of Sales
Farmers Union State Exchange
Omaha, Nebraska

*The serviceability of the Handbook is, of course, increased by the fact that it is firmly bound in cloth. Do you have one of our binders for **BUTANE-PROPANE News**? It will also make for ready reference and long preservation.—Ed.*

Gentlemen:

Your article some time ago entitled "Name Please," is very timely and worthy of consideration. I have noticed several letters on the subject and would now like to offer my suggestions.

It seems to me that "Distilled Gas" would be descriptive of both Butane and Propane and would tend to give it a classification of its own, just the same as the words "natural" and "manufactured."

By using the name "Distilled Gas" we could eliminate the misnomer "bottled gas" and dispense with the complex "Liquefied Petroleum Gases."

In my own mind, the word "Distilled" as applied to water or chemicals has always been suggestive of something a little better and more to be desired than the common substance in its ordinary form.

If this implied thought were carried into the advertising and sales talk it should be helpful in directing the layman's mind and cause him to realize that L. P. G. is really a superior fuel.

C. D. PHIFFER

The Quad Stove Manufacturing Co.
Columbus, Ohio

This subject of a more suitable name for our industry is certain to increase in importance with time. We have had many name suggestions. Are there any more?—Ed.

Gentlemen:

I am just starting in the butane-propane business. I like your magazine very much and would hate to ever miss a copy.

W. T. THOMPSON

Cookeville Battery Company
Cookeville, Tennessee

We will try to see that you never miss a copy.—Ed.

BUTANE-PROPANE News

HYDRO-GAS SYSTEM OWNERS

Wrote this Ad ...



M. BERTHOD, a baker in LEADVILLE, COLORADO, says:

"I believe there is no finer method of baking. My bakers prefer to work with this fuel because it is so clean and quick in getting the oven to the high degree of temperature desired, regulation can be made with no effort at all and your finished products cannot look any finer. There is no need of keeping fuel containers lying around in the working space of the bakery shop, which furnishes an absolutely clean atmosphere. I don't believe any other can do the work of Hydro-Gas with the same amount of efficiency and low cost."

MRS. MARTIN ANDERSON, HAY SPRINGS, NEBRASKA, writes:

"We have a gas-fired furnace, automatic water heater, and gas cook stove. During December we had some severe weather, as cold as 15 deg. below zero. From period October 1st to January 6th our average cost was 46 1/2 cents a day. January 6th to February 7th we had temperatures from 49 deg. above to 20 deg. below zero. Average was 15 deg. below. Our house isn't new or insulated. Net cost for fuel was \$23.52 for the 31 days, 76 cents per day or equivalent to 3 buckets of good coal in 24 hours but during this period our neighbors were using twice this without the added convenience of hot water or cooking."

MRS. J. L. COLEMAN of JUNCTION, TEXAS, has this to say:

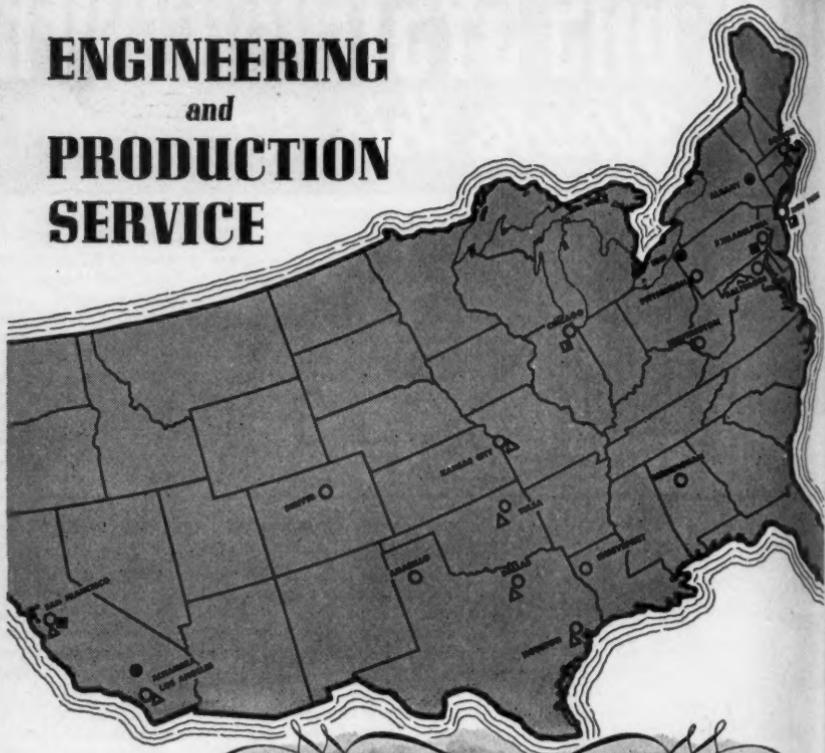
"After keeping house for thirteen years without one modern convenience, in 1936 we had a Hydro-Gas system installed, put in a large refrigerator, range, lights, heater and iron. The cost of gas has never run as high as the wood. When the severe cold hit this section this winter, gas plants all over this country froze up, but never a Hydro-Gas System. Having the Vaporizer and Re-Vaporizer was a big help in selling this plant to us, as we cannot afford to run without heat. I can not give enough praise to Hydro-Gas. It has revolutionized my household tasks, and made the things I had come to dread a real pleasure."

The patented Vaporizer and Re-Vaporizer have made Hydro-Gas Systems the accepted choice of thousands. Each system is built in accordance with rigid specifications of A.S.M.E.—is inspected by Hartford Steam Boiler and Inspection Co.—carries the Underwriters' Laboratories acceptance—and consumer interest is being created with aggressive advertising. Correspondence is welcomed from responsible prospective distributors and dealers in territories not now under franchise.



SOUTHERN STEEL COMPANY, SAN ANTONIO, TEXAS

ENGINEERING and PRODUCTION SERVICE



LEGEND

- General Offices △ Stock ● Factory—Producing, and all other Functions
- Sales Office □ Factory (Repair and Proving); Warehouse Stock
- Factory (Proving only); Warehouse ■ Factory—Assembly, Repair, Proving

COMPLETELY equipped plants; engineering offices in eighteen cities; serving the Liquefied Petroleum Gas Industry . . . Manufacture, repair and engineering recommendations on meters, special indexes, regulators.

GENERAL OFFICES • 60 EAST 42nd STREET, NEW YORK, N.Y.

AMERICAN
METER COMPANY
INCORPORATED 1881 (ESTABLISHED 1838)

MAINLY BEYOND THE MAINS

LPG IS MORE THAN A FAD

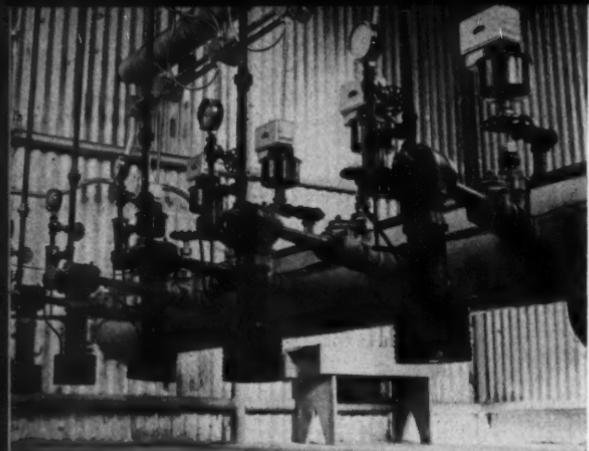
If anyone in the LPG business doubts that he has a bear by the tail, he can needle up his confidence in the future of his enterprise by taking a look at the 1939 record. The gallonage of butane and propane going into domestic consumption increased from 57,832,000 in 1938 to 84,600,000 for last year, a gain of over 40%, according to an estimate released by the United States Bureau of Mines. This is just one of a steady succession of annual increases that have seen the domestic load built up from a little over 21 million gallons five years ago, or a 300% gain for the period.

A survey of gas range manufacturers just completed by the A.G.A.E.M., the organization that is putting all of the push behind the CP range campaign, discloses that the appliance side of the picture is even brighter. The number of gas ranges sold in 1939 for use with LPG increased 58.6% over those sold during 1938. Over a five-year period this classification of range business has shown a gain of 221.5%, until last year it represented 14% of the total gas range sales of all reporting manufacturers.

This is nothing short of phenomenal when we take into consideration the fact that during the five-year period when LPG ranges were jumping 221.5%, the total sales of all gas ranges increased only 19.7%.

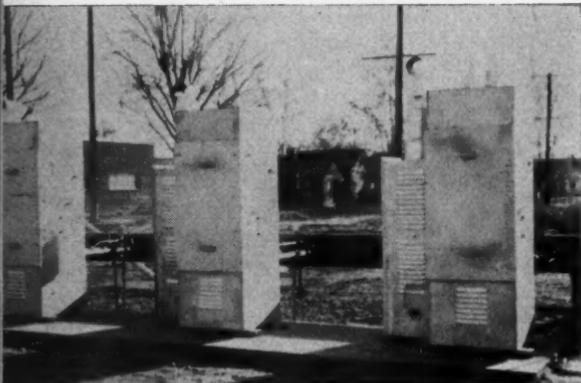
Only one conclusion is possible, and that is that the distributors and dealers who are responsible for butane and propane sales to the public are even more alert to the advantages of good appliance merchandising technique.

Today 41 range manufacturers have one or more models approved for LPG by the American Gas Association's testing laboratory. Tomorrow any of the remaining 19 who are overlooking this field will be in a class with the livery stable owners of 30 years ago who decided that the automobile was just a passing fad.



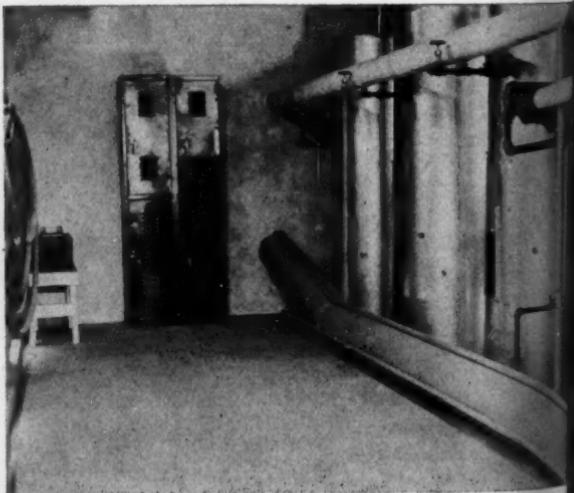
Butane-Air

Five of six venturi mixers and controls in Prosser, Wash., butane-air plant of Northwestern Natural Gas Co.



Gas-air mixers installed at Sunnyside, Wash., where butane is supplementing and diminishing supply of natural gas formerly used.

Three of four vaporizers, upper manifold, made gas manifold (lower), with surge line on top at Toppenish, Wash. Battery in corner supplies D. C. to controls.



Plant Fills Gap As Natural Gas Supply Diminishes

By EARL TINIUS

Manager, The Northwestern Natural Gas Company, Grandview, Wash.

LIQUEFIED petroleum gas is rapidly supplanting natural gas in many central Washington towns which have formerly been supplied by the natural gas from Rattlesnake Hills

in the central Yakima valley. Introduction of butane-air into the systems of the operating companies is necessitated by the depletion of natural gas fields.

Among other changeovers are those of Prosser, Toppenish and Sunnyside. Plans are under way

for a fourth installation at Grandview this year.

A butane-air mixing plant was put in service in Prosser Nov. 17, 1939, by the Northwestern Natural Gas Co., and one a month earlier in Toppenish by the Northwestern Natural Gas Corp. There is a third, and similar, plant at Sunnyside.

Several months were spent in the study of the different types of equipment, and the plants as they have been installed provide maximum serv-

ice at a low operating cost. Attention to operating cost was necessary due to the low rate to the consumer of \$2 for the first 1000 cu. ft. and 75 cents per thousand for all over 1000 cu. ft. on 950 B.t.u. butane-air gas.

Inspirator type mixing equipment was installed in both the plants by D. E. York, engineer for Ransome Co., contractors, of Emeryville, Calif. Electrically controlled venturi mixers develop 20,000 cu. ft. per hour at Toppenish and 15,000 cu. ft. per hour in Prosser. Provision has been made for an ultimate capacity of 40,000 cu. ft. at Toppenish and 30,000 cu. ft. at the Prosser installation.

Anticipating the Future

Future business had to be anticipated in the present plants, due to the completion in 1941 of the Roza Irrigation Canal which will increase the tillable land in the area served by the two companies by 50,000 acres.

Present consumers in Prosser total 275 during the heating season with a peak load of 6,500,000 cu. ft. per month. The Toppenish plant serves 400 consumers with a peak load of 10,000,000 cu. ft. per month. In the



EARL TINIUS

MAY 1940

past, 900 B.t.u. natural gas has been served these communities and previous experience shows 950 B.t.u. butane-air operates successfully in present natural equipment with minimum adjustment.

Every possibility of continuous service has been built into the plants.

The two Toppenish storage tanks of 16,600 gals. capacity each, were installed in January, 1938, and similar capacity has been installed in Prosser.

The tanks are provided with two safety valves each, maximum flow outlet protection. The unloading is done by electrically driven pumps. To maintain pressure on the tanks when temperature conditions demand it, automatically controlled air compressors are used. The vaporizing equipment used is that developed by the Ransome Co. Each unit has a normal vaporizing capacity sufficient to supply 5000 cu. ft. per hour of mixed gas with a peak load capacity of 150%, or greater. Many safety features have been embodied in these units which include safety pilots and automatically operated liquid control valves, so that the flow of liquid ceases in case of pilot failure.

System of Controls

Other controls include low water shutoff, ruptured diaphragm shutoff, and vapor leakage shutoff. The flow of vapor to venturi mixers passes through a 3-in. insulated manifold and at this point is pressure controlled through solenoid valves to the air inspirator. These valves normally operate on conventional power supply; however, should a failure occur it is

automatically placed on a storage battery circuit.

All valves are individually controlled by a photo-electric cell in front of which is burning a bunsen burner from that individually controlled tube. This, for the reason that it is inherently impossible to make a lean gas and, therefore, the photo-electric valve is solely actuated by luminosity or rich gas. These cells in turn actuate an alarm, visible and audible, indicating failure and calling for attention. The battery is kept in condition by a trickle charger.

For Present Peak Loads

As these plants are intended for standby or peak load purposes to offset the demand for natural gas, there are times when the plants will be idle for hours as well as possibly days without operating; however, pressure governors at the town borders are so set that a predetermined drop in the distribution system pressure will cause the plants to come on the lines and supply the total demand until such time as the predetermined recovery of the other source.

To provide for the elimination of condensation of liquid butane occurring in the portion of the plant where in vapor is required, an automatically controlled hot water circulating system is provided, thereby maintaining proper temperatures.

Reduction of pressure on the distribution system has reduced losses in unaccounted for gas.

Since October, 1939, Toppenish has used 150,000 gals. of butane, Sunnyside, Wash., 84,000 gals. and Prosser a total of 105,000 gals.

LPG Stands By at Corning

By ELLIOTT TAYLOR

THE Corning Glass Works has been much in the public eye since 1934 when work was first started on the giant 200-in. telescope disk which has since been completed and shipped to the California Institute of Technology at Pasadena. Other less spectacular products which are produced daily in the main plant at Corning, N. Y., include chemical glass and tubing, Pyrex brand glass ware for both laboratory and domestic use, and the beautiful and flawless Steuben ware for decorative use.

The manufacture of glass is a process in which the utmost precision, combined with expert craftsmanship is demanded in every stage and process, from the mixing of raw materials into a batch, through melting, casting or blowing, to annealing and finishing the ultimate products. Temperatures are a primary consideration, and only a flexible fuel in a continuous and dependable supply can be relied upon to produce them.

Due to the high temperatures that must be maintained in the melting tanks, such tanks, once they are placed in operation, are never allowed to lose their heat until they are ready to be dismantled and rebuilt. The initial heating operation on such a tank is a matter of weeks, and once a tank has been brought up to temperature it is not uncommon to operate it con-

tinuously, day and night, for over two years before allowing it to cool for rebuilding the ceramic linings.

Natural gas has been used as the principal fuel at the Corning plant. This gas coming from the fields that lie under northern Pennsylvania and central and southern New York, has been gradually but steadily diminishing in supply over the past two years. As a result of this the public utilities have been obliged to conserve the dwindling reserve for residential use, and the commercial and industrial

Blowing a Pyrex brand beaker in an iron paste mold. Corning Glass Works.



con-
front
urner
rolled
it is
a lean
electric
viscosity
actua-
, indi-
atten-
condi-

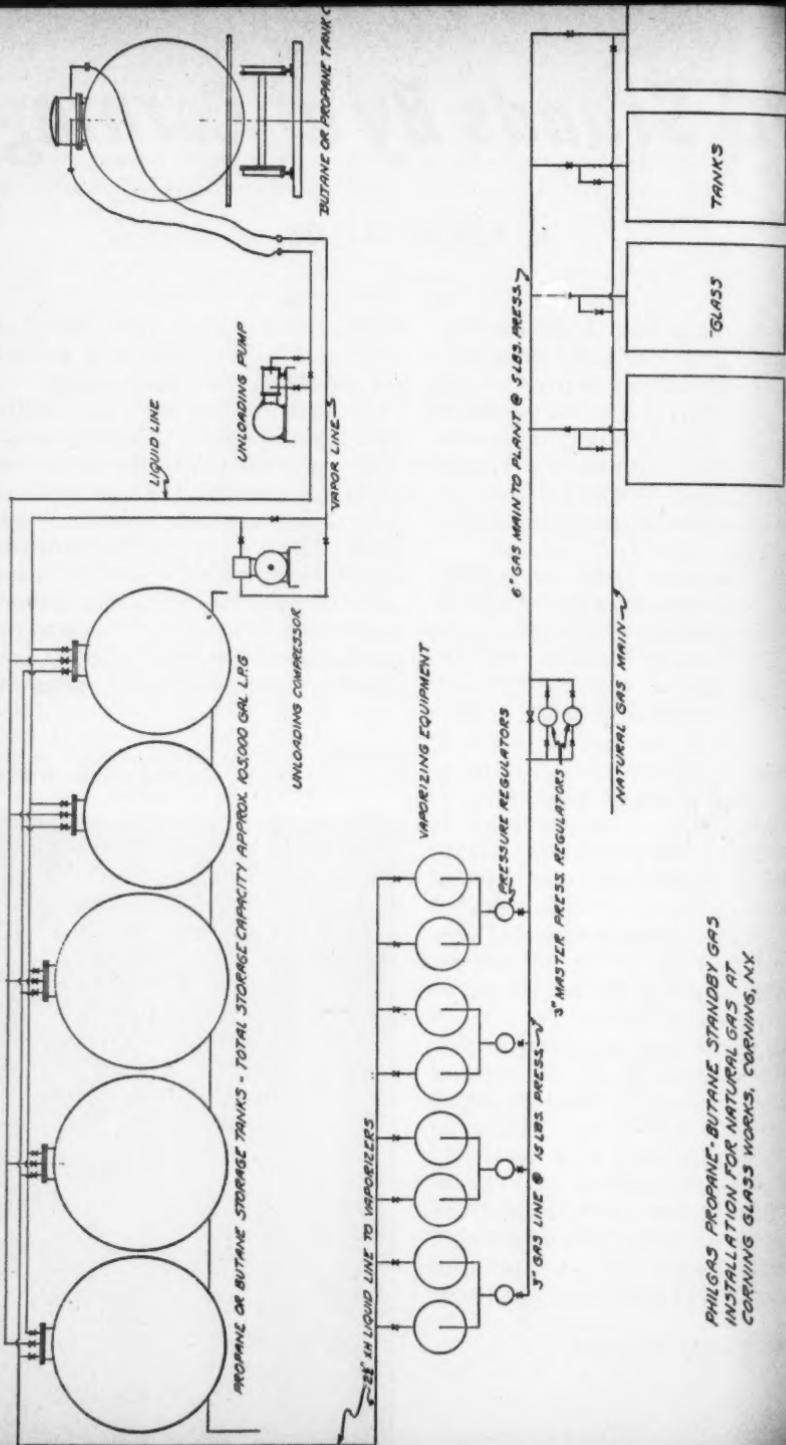
ed for
to offi-
, there
be idle
y days
pressure
are so
in the
ll cause
nes and
til such
vory of

ation of
e occur-
t where
matically
ing sys-
ntaining

the dis-
losses in

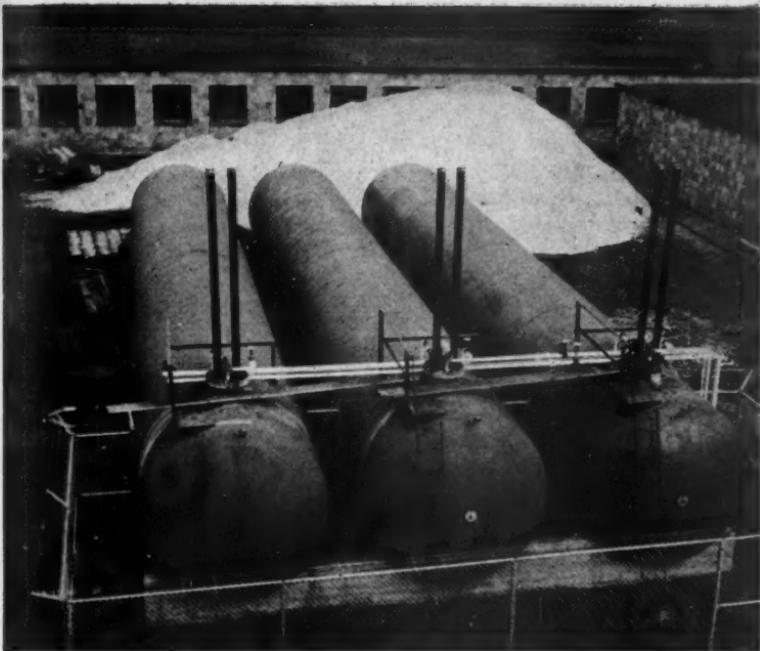
oppes-
ane, Sun-
and Pro-

NE News



PHILLIPS PROPANE-BUTANE STANDBY GAS
INSTALLATION FOR NATURAL GAS AT
CORNING GLASS WORKS, CORNING, NY

FLOW CHART OF LPG SYSTEM AT CORNING GLASS WORKS. CORNING, N.Y.



The first three of battery of five LPG storage tanks installed at the Corning Glass Works, Corning, N. Y.

consumers have been warned that they must look elsewhere for their fuel supply.

Since natural gas is still available at off-peak times, the most pressing immediate problem has been to secure a standby and auxiliary service capable of substituting for natural gas on very short notice, and with no loss in production.

A new propane installation has just been engineered and installed by the Philgas Department of the Phillips Petroleum Co. which appears to adequately fill these requirements for the Corning Works.

As a replacement fuel, propane is

not usually competitive to natural gas; certainly it is not in this instance, on a straight cost basis. But the flexibility of changeover from natural gas makes it a valuable emergency fuel. If the time should come when natural gas must be replaced permanently, then it is probable that the major loads will be placed on a more competitive fuel—producer gas, perhaps. But even if this change is eventually made, propane will remain ideal for the more delicate and critical operations such as firing lehrs, feeders and cut-off burners.

The present installation at Corning might well be regarded as a profitable

insurance investment, assuring continued operations without loss of production or expensive close downs, so long as propane is available for standby or emergency purposes.

The accompanying flow chart shows the hook-up of the installation. From the tank car the fuel, either butane or propane, passes through the unloading units which consist of both a vapor compressor type and a reciprocating pump. Normally the pump is used when butane is being unloaded, and the compressor is employed to empty propane cars. But either or both pieces of equipment may be used on both fuels. The unloading lines discharge the tank car contents into a battery of five storage tanks. Three of these are 30,000-gal. water capacity tanks, and two are 18,000-gal. The combined capacity is 105,000 gals.

A 2½-in. liquid pipe line runs from the storage to eight vaporizers, approximately 2,200 ft. away. Liquid fuel is fed through this line at tank pressure to the steam heated vaporizers where conversion to gas is accomplished. The gas outlets of the vaporizers are manifolded through pressure reducing equipment to an outlet pressure of from 10 to 15 lbs. The gas then flows from these primary regulators to two master regulators.

From the master regulators a 6-in. main carries the gas to burners heating the glass tanks and for other operations. The vaporizer capacity is 1800-gals. per hour.

The system is so designed that either butane or propane may be used interchangeably. The natural gas burners require no adjustment when a fuel switch from natural gas to propane is necessary, other than hand control of the heat input. Butane or propane gas is supplied through a separate main to each glass tank header. Four glass tanks or any single unit or combination of units can be put on propane by simply closing the natural gas valve to the header and opening the propane valve, using the same header and control valves.

During the past winter some of the burner equipment has had to be switched from one fuel to the other as often as twice a day, depending on the pressure drop in natural gas lines occasioned by the domestic peak load.

Since the situation as to the natural gas supply might well have approached emergency proportions, utmost speed in designing and installing was necessary. The first propane was delivered to the burners within 60 days after the order had been placed for tanks and other supplies.

LPG Equipment and Appliance Exhibit, June 26-27

The first annual Pacific Coast exhibit of equipment and appliances manufactured for the liquefied petroleum gas industry will be held in Santa Barbara, Calif., on June 26-27. It will be under the auspices of the Pacific Coast Section of the Liquefied Petroleum Gas Association, according to an announcement by C. L. Parkhill, chairman.

Manufacturers of equipment and appliances and others engaged in the industry, whether in the East, the Mid-Continent, the South, or the West, will be invited to participate. Full details may be obtained by addressing John H. Kunkel, Section Secretary, 1625 S. Alameda, Los Angeles, Calif.

The "4 Big Jobs" for \$9.88 A Month

DEEMING it an advantage to their business to acquaint the public with the actual costs of using liquefied petroleum gas so that a basis may be established for comparison with the costs of other fuels, the Las Vegas Gas Co., Las Vegas, Nevada, has published in the local newspapers the actual figures of typical family consumption, prepared by W. D. Vance, manager.

Table No. 1 shows the actual cost of operation over a 14 months period for a six-room house equipped with a gas warm air furnace, gas automatic water heater, Servel Electrolux refrigerator and gas cooking range. The appliances were installed in 1935 and no maintenance costs have accrued since then.

TABLE NO. 1

February,	1938.....	\$10.02
March,	1938.....	9.24
April,	1938.....	8.52
May,	1938.....	5.55
June,	1938.....	3.90
July,	1938.....	3.75
August,	1938.....	3.60
September,	1938.....	3.90
October,	1938.....	6.90
November,	1938.....	12.10
December,	1938.....	12.55
January,	1939.....	13.98
February,	1939.....	14.18
March,	1939.....	10.35
		\$118.54

It will be found, Table No. 2, that figures reveal the difference in operating costs in four different apartments,

the variance in amount due to the personal factor in fuel consumption. The apartments are identical and equipped with the same number and types of appliances, these being a gas space heater with automatic room thermostat for controlling heat of apartment, a gas automatic hot water storage heater, and a gas cooking range.

TABLE NO. 2

Year	Apt. No. 1	Apt. No. 2	Apt. No. 3	Apt. No. 4
1938				
July ..	\$ 1.80	\$.32	\$.00	\$ 1.63
Aug. ..	1.40	1.12	1.40	2.52
Sept. ..	1.72	1.96	1.72	1.95
Oct. ..	4.20	4.65	.72	3.05
Nov. ..	10.62	9.40	7.12	12.39
Dec. ..	11.42	8.49	9.98	9.12
1939				
Jan. ..	14.02	9.49	11.87	7.33
Feb. ..	14.72	8.63	8.78	10.26
Mar. ..	7.61	5.51	.78	7.23
April ..	2.74	2.27	1.42	4.63
May ..	3.64	1.14	.88	1.50
June ..	1.74	1.17	2.68	2.22
Year ..	\$75.63	\$54.15	\$47.35	\$63.83

The frank and accurate publication of liquefied petroleum gas costs by the Las Vegas Gas Co. has met with popular response and has resulted in a steady growth of gas load in competition with low priced electricity and oil.

Last fall this company augmented its city system by serving bottled gas to outlying districts.

Engine Conversions

THE purpose of this paper is to endeavor to explain the equipment needed and the procedure of converting a gasoline motor to use butane fuel most effectively.

Butane equipment consists primarily of a fuel tank, a converter, and a gas-air mixer.

The fuel tank differs from the ordinary gasoline fuel tank in that it has to be constructed to withstand pressure, and has valves to hold the butane securely within the tank; whereas, a gasoline tank is vented to the air. May we elaborate on this point at this time, as it is an outstanding safety feature of butane. A butane tank does not have to be vented to the air, for as the butane liquid fuel is withdrawn from the tank, gas from the remaining liquid fills the space in the tank above the liquid. This does not happen when using gasoline. As the gasoline is withdrawn from the tank, air must be let in to fill the space previously occupied by the gasoline, or a vacuum would be formed which would cause the gasoline system to fail. As the air enters the gasoline tank through the vent in the cap, it mixes with the gasoline vapors that are ever-present from the gasoline, and may form a very explosive mixture. A static spark or open flame could explode this mixture with tremendous force. As air or oxygen

By HAROLD W. SMITH*

President, American Liquid Gas Corporation, Los Angeles

is necessary to form an inflammable or explosive mixture, and as no air ever enters a butane tank after it is once filled, there could not be an explosion of the butane within the storage tank.

The present California State Code requires that tanks for automotive use be constructed to 175-lb. working-pressure specifications. Fuel capacities usually range from 25-gal. tanks up to 75- or 85-gal. sizes; and one or two tanks are installed on the truck unit, depending upon its use and the locality where it will operate.

The following valve assembly is usually installed on each tank: A $1\frac{1}{4}$ -in. filling valve with internal check to seal the butane fuel within the tank as soon as the filling hose is disconnected. A $\frac{3}{4}$ -in. vapor return valve with a special internal check. This valve may or may not be used in filling. Pressure-type dispensing units seldom use the valve; whereas, it is generally used where gravity or low-pressure motor or hand pumps are employed. A $\frac{1}{4}$ -in. 10% valve serves as a fixed top liquid level gage. When liquid appears at this valve, filling should cease. A $\frac{3}{4}$ -in. rotary gage indicates the amount of butane in the tank. This valve consists of a long, hollow tube that extends from

*A paper delivered before the Motor Vehicle Engineering Society at its February meeting, Los Angeles.

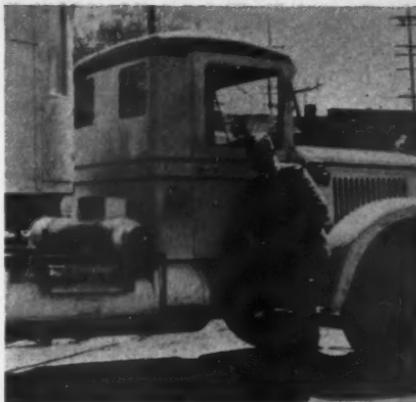
the center of the tank to its inner shell. The outer end of this tube is sealed by a valve cap; and the entire unit can be rotated. When the inner end of the tube is above the liquid level in the tank, only gas issues from the tube; when the valve is open, as the tube is rotated and the end of the tube contacts the surface of the liquid butane, a white mist issues from the tube and an arm fastened to the outer portion of the tube indicates on a calibrated dial the percentage of butane in the tank.

Two fusible plugs, a spring-loaded $\frac{1}{4}$ -in. relief valve, and a $\frac{3}{4}$ -in. liquid fuel service valve with a dip tube extending to the bottom of the tank, complete the valve assembly. The valves may be installed on the side, top, or end, of the tank—which ever location gives the greatest convenience. A steel cover, or guard, is added to protect the valve assembly.

Some Start on Gas

An extra gas valve on the tank is sometimes necessary for certain types of butane carburetor units which require that they first start on gas from the top of the tank. After the engine starts, the unit is then switched back to operate on liquid. Most makes of butane carburetion units, however, start and operate entirely on liquid, and this extra gas valve is not required.

Butane liquid is forced from the tank through copper tubing—which is generally encased in loom—to the converter unit by its own pressure. Vacuum tanks, fuel pumps, etc., are, therefore, entirely eliminated. Vapor-lock troubles are also done away



Harold W. Smith beside one of his butane motor truck conversions.

with, which is an important feature for trucks operating in warm mountainous territories.

The butane fuel now enters the converter. This unit consists of one or two regulating units, which in most cases reduce the tank pressure of the butane fuel to below atmospheric pressure. In other words, it is necessary to crank the engine, exerting a slight vacuum on the converter, before it will operate and allow gas to flow to the mixer. As butane flows from the fuel tank to the converter, it is in liquid form. Thereafter, it is a gas. As the tank pressure is reduced in the converter first to between $1\frac{1}{2}$ to 15 lbs. and then to below atmosphere (or to approximately atmospheric pressure, where a positive shut-off mixer is used to close off the flow of gas from the converter) refrigeration occurs after each drop in pressure. This refrigeration is approximately equivalent to the melting of $5\frac{1}{3}$ lbs. of ice for each gallon of butane used, and the refrigeration

must be removed from the system or it would continue to build up and cause difficulties.

This refrigeration may be utilized to cool the body of a refrigerated truck unit, or it may be absorbed by circulating water from the radiator and cooling system of the motor flowing over coils or compartment connected with the converter. The butane flowing through these coils, or through the cast compartments that are in contact with the circulating water, dissipates the refrigeration, and the butane leaves the converter as a warm, dry gas—which then flows to the gas-air mixer, or, in other words, the carburetor.

Being a gas, the butane is now very easily mixed with air in the correct proportion over the entire engine range. One of the most accurate methods of metering the butane gas and air is by means of a proportional mixer. In this unit a tapered air

valve connected directly to a correctly tapered gas valve is actuated by the manifold vacuum exerted through the throttle. As the throttle is opened the increasing vacuum acts on the tapered air and gas valve, automatically opening it to the correct position, corresponding to the horse-power output required by the engine, and a constant flow of correctly-proportioned gas and air will enter the engine cylinders at all engine speeds.

Various types of venturi mixers also give very satisfactory results. They function very similarly to the gasoline-type venturi, only better results are generally obtained due to the butane entering the venturi as a dry gas.

Now that we have the butane fuel flowing from the fuel tank through copper tubing, to the converter, and on to the gas-air mixer where it is correctly proportioned and ready for all engine requirements, we will outline changes in the standard gasoline engine which will enable it to utilize the butane fuel to its best advantage.

For those of you who have operated units on ethyl gasoline, some idea of the advantage that may be gained by the use of this high anti-knock butane fuel will immediately be apparent, for blended butane fuels have an anti-knock value far in excess of ethyl gasoline, and even superior to the much talked of expensive aviation gasolines. Besides having exceptionally high anti-knock value, butane fuel has the added advantage of being a gas. Manifold difficulties, stratification, puddling, etc., that are constantly encountered with gasoline,



The miscellaneous parts needed for an average conversion of a gasoline engine to one burning butane gas.

disappear when butane is used; and a uniform mixture of fuel flows through all sections of the manifold to each cylinder, and assures a full, correctly proportioned charge of fuel. Wet spots are eliminated from the manifolds, and hot spots are not needed. These conditions, when using gasoline, often cause some cylinders to receive too rich a charge, and others too lean, causing uneven power impulses, loss of power, and motor stress due to rough operation.

For Maximum Performance

As butane does not need the hot spot in the manifold to gasify it—as is the case with gasoline—we should remove it to secure maximum engine performance. Otherwise, the hot intake manifold will tend to expand the dry butane fuel charge and reduce the volume that will enter each cylinder, with a resulting decrease in power.

To cool the intake manifold, it is separated from the exhaust manifold, and the hot spot section between the two manifolds is removed as much as possible, leaving a space for air circulation. Any openings made in the manifolds by performing this operation are welded closed, and the manifolds are then replaced for service.

Another important factor in secur-

ing maximum efficiency is to increase the compression ratio of the engine. In this regard, the same principal applies to butane as to ethyl fuel. In a real low compression engine, we would gain very little advantage by only using the higher quality ethyl fuel. However, by increasing the compression to take advantage of the higher quality anti-knock value of the fuel, an increase in power and economy will be obtained. This is even more true when using butane fuel. It being the most ideal fuel obtainable, and having a very high anti-knock value, we must increase the compression ratio to take advantage of its ideal characteristic in order to secure maximum efficiency and increased horsepower.

An example of the value of raising the compression of the engine is indicated by Table No. 1.

Compression Ratios

The compression ratio on engines of large size and bore should be in the neighborhood of 7 to 1, while on small bore engines the compression may be raised considerably above this point. The engine compression is usually raised by one of the following methods: High altitude pistons may be inserted in the engine; the cyl-

TABLE NO. 1

Compression Ratio	Developed Horse-power	% increase in Horsepower	% decrease in fuel consumption
4.38 to 1	66.5	-----	-----
4.85 to 1	76.5	13.5	4.2
6.75 to 1	87.0	30.9	17.3
8.57 to 1	96.0	44.4	19.4

inder head on some engines may be planed; or the heads may be filled in; or new high compression cylinder heads may be secured and installed. In raising the compression best results are obtained by giving careful attention to the turbulence within the combustion chamber as the compression is raised. Our engineers have given this point a great deal of attention and surprising results have been achieved. On one piece of equipment that was converted from gasoline to butane the engine at first had difficulty equaling the top performance that had previously been obtained on gasoline. After a detailed analysis and a change made in the cylinder heads to improve the turbulence characteristics of the combustion chamber, a considerable increase in horsepower was obtained along with increased economy. For example, on the same trips that a 34-ton truck and trailer unit had required 190 gals. of gasoline, the units after conversion only required 150 gals. of butane.

Watch Ignition System

Besides increasing the compression ratio, a check on the ignition system is very important, as a strong coil, properly adjusted distributor, and good spark plugs are necessary to give good ignition, due to the increased compression ratio. The ignition system is too often overlooked or neglected after the butane conversion has been made, and a weak ignition system often causes many engine troubles that are blamed on the butane fuel.

Should an engine be converted to butane without raising the compression ratio, it is usually necessary to

advance the spark somewhat ahead of the setting previously used on gasoline. However, with the increased compression ratio and the combustion chamber designed to give the proper turbulence, the spark curve and setting will approach very closely to the spark curve and setting for gasoline.

No More Oil Dilution

Among other advantages that may be expected when the engine is converted from gasoline to butane are the elimination of oil dilution, allowing a lighter grade of oil to be used which reduces internal friction. Many test and service results have proven that the lubrication oil will last many times longer when butane is used. Very little carbon is formed when using butane fuel and piston rings remain free in their grooves and do not become clogged with carbon deposits. They therefore function freely to maintain compression and save lubricating oil. With butane used in the engine as a dry gas there will be no washdown of the oil film from the cylinder walls, and the severe wear is eliminated that often occurs as raw gasoline enters the cylinders washing the oil film from the cylinder walls when the choke control is used in starting on gasoline.

A substantial saving in operating cost may always be expected along with increased horsepower if desired, better torque or pulling power, less oil consumption, and a decided reduction in engine wear and maintenance. These features tend to recommend butane conversions for gasoline engines on trucks, tractors, busses and all stationary and heavy duty equipment.

A. G. A. Laboratories Now Test Heating Appliances

By F. A. ALLEN

Assistant Supervisor, Pacific Coast Branch
A. G. A. Testing Laboratories

SINCE their establishment in 1925 the American Gas Association Testing Laboratories have been testing domestic gas-burning appliances for compliance with nationally recognized standards. Those found to meet them have been approved and required to display the trademarked Laboratories Approval Seal as evidence of this fact. In this way a ready means of identification of approved equipment has been made

available to the gas-consuming public as a guide to its purchase.

During the first few years of the Laboratories' operation, appliances were approved for use only with city gases. Within the last decade, liquefied petroleum gases, commonly known as bottled gases, came into increasing use among rural consumers where city gas service was not available. At that time the American Gas Association, in cooperation with the bottled gas interests, took the necessary steps through its Approval Requirements

Committee to make appropriate additions to existing approval standards to permit testing of certain selected equipment for bottled gas. As a preliminary step, the personnel of the various committees preparing these standards was strengthened by the addition of representatives of the bottled gas industry.

Domestic gas ranges and water heaters were first considered and as a result of the extension of standards covering them, a considerable number of such appliances have been tested and certified for use with liquefied petroleum gases. Such a demand arose for products of this type that revisions were undertaken to additional sets of standards to cover other commonly used types of equipment. These were completed a few months ago and requirements made available covering space heaters, unit heaters, clothes dryers, and central heating equipment, such as boilers, warm air furnaces and floor furnaces. These new standards, which were approved by the American Standards Association Feb. 23, are currently being applied in the examination and test of such equipment. All have been printed and distributed to the industry.

In view of the interest which has been taken in the development of ap-



F. A. ALLEN

pliances for operation on liquefied petroleum gases in the Pacific Coast area, it seems particularly fitting that this extension of the American Gas Association's approval testing program to permit approval of a number of additional types of appliances should so closely coincide with the erection of the new Pacific Coast Branch Laboratories in Los Angeles.

While testing and approval of bottled gas appliances have been increasing at both the Pacific Coast Branch and its parent Cleveland Laboratories for several years to the extent that existing standards permitted, it can readily be seen that the establishment of the new Los Angeles building, as

Test Engineer Charles Koch determines the heating value of test gas.



well as the availability of several sets of additional standards, should play an important part in making available within the near future a much wider range of approved equipment from which liquefied petroleum gas users can select products which would particularly suit their needs.

The term "approved liquefied petroleum gases," as used in the various sets of approval standards, is considered as including the following:

1. A hydrocarbon product composed predominantly of propane and/or propylene.
2. A hydrocarbon product composed predominantly of butane and/or butylene.
3. A uniform mixture of the two hydrocarbon products indicated in "1" and "2" above.

Commercial propane and butane conforming to the specifications of the Natural Gasoline Association of America comply with these definitions and are the more commonly encountered products known by the general term of "liquefied petroleum gases" or "bottled gases." It will thus be seen that such gases cover the range between propane on one extreme and butane on the other.

When bottled gases began to come into common use, propane was generally employed. At that time butane had not assumed its present significance and no particular consideration was given to equipment for its use. However, within a comparatively few years butane became more and more a factor and an increasing demand arose for the availability of approved equipment for its utilization. In order to prepare suitable test standards which would cover bottled gases gen-

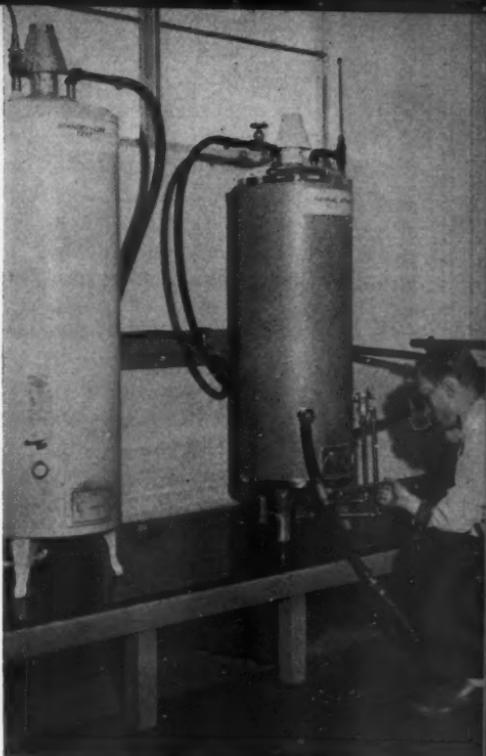
al sets
I play
available
wider
from users
d par-
ed pe-
various
consider-
: im-
posed
propy-
nposed
cylenes.
wo hy-
" and
butane
of the
nitions
encoun-
general
gases"
thus be
range
the and
come
s gen-
butane
signifi-
ration
s use.
ly few
more
emand
proved
In or-
standards
s gen-

erally, it was necessary to determine the performance of representative appliances operating on both propane and butane, and to determine the proper test gas which should be employed to cover LP gases.

Butane Provides Severest Tests

Results of numerous tests showed clearly that butane imposed the more severe test condition and that if satisfactory performance were obtained using it, that propane would present no problem. Butane, therefore, was adopted as the Laboratories' test gas to be used when approval of an appliance on liquefied petroleum gases was desired.

While the approval standards applied in the testing of equipment for use on liquefied petroleum gases are similar in a large majority of respects to those for use with city gases, a few differences exist. From the standpoint of construction, for example, fixed orifices are required throughout for all bottled gas appliances. Automatic pilots which are now mandatory on many modern types of appliances must, in the case of liquefied petroleum gas equipment, be capable of shutting off not only the main burner, but the pilot supply as well in the event of outage of the constant-burning pilot. Materials used for diaphragms and valve seats, as well as those employed on pipe threads, must be resistant to the action of liquefied petroleum gases. Due to the nature of these gases and their high specific gravity, it is important that no escape of unburned gas take place. The approval standards, therefore, contain special provisions to insure against



A. R. Duim observes temperature for water heater thermal efficiency.

such a condition ever coming to pass.

In the case of performance details covered by the approval standards, the same basic specifications apply to both city gases and liquefied petroleum gases. Due to the considerable differences in physical properties and performance characteristics between city gas and bottled gases, however, separate tests are required in each instance, using the appropriate test gas and separate approvals likewise granted. This is for the reason that changes must, in many cases, be made to enable an appliance approved on city gas to operate satisfactorily on one of the liquefied petroleum gases.

Alterations in burners represent one of the most common changes. Spacings to heating surfaces may require modification and input rates are in many instances different than those employed with city gas. Fixed ori-fices, furthermore, must always be employed on appliances operating on bottled gas. In view of these facts, it is particularly important to determine that full compliance with all applicable requirements be obtained before approval can be completed on an appliance for bottled gas operation.

To clearly indicate that a bottled gas appliance must be used only on the proper fuel, approval standards specify that all equipment approved for liquefied petroleum gases must bear the following statement in a legible position: "This appliance is approved for use only with liquefied petroleum gases." In this way a ready means of identification is afforded of the particular fuel on which approval has been granted and restricts such approval to that fuel only.

Must Mark Each Appliance

It is particularly important that such a marking be placed on each appliance so approved by its manufacturer at the factory so as to readily identify it for future use. This marking is regarded as part of the equipment which the appliance is required to carry in order for it to be regarded as an approved model. No change in the field to convert any appliance to the use of a gas different from that for which it was approved should therefore be made as this would nullify its approval.

In the short time which has elapsed

since additional standards became available for other types of liquefied petroleum gas equipment, a number of manufacturers have indicated their desire to obtain approval. Manufacturers of space heaters and central heating equipment have been particularly active in availing themselves of the new Laboratories' services.

High Percentage of Approvals

Since the Laboratories commenced operations, the value and significance of the trade-marked Laboratories Approval Seal has steadily increased. At the present time it is estimated that approximately 95% of all gas-burning equipment sold in the United States and Canada displays this emblem. Utility companies, dealers, jobbers, mail order houses, department stores, and other retail outlets are becoming more and more insistent that all such equipment offered by them for sale be so marked.

The value to the gas-consuming public of a ready means of identification of equipment complying with nationally recognized standards will be self-evident. This has been enjoyed for many years by users of city gas. It is believed that the bottled gas consumers generally will be greatly benefited by the extension of the program which will permit testing and approval of equipment designed for LPG.

This expansion of scope of the American Gas Association testing and certification program, together with the enlargement of our Laboratories' facilities, represent a further step in safeguarding the interests of the gas-consuming public through making available tested and certified products.

LPG Solves A Fuel Problem

By C. L. J. SMITH

Managing Owner, Pensacola (Florida) Motor Lodges

FOR 35 years the writer was a commercial salesman and at one time traveled 45 of the 48 states. The last seven years my wife traveled with me and it was not long before she prevailed upon me to try the accommodations of a tourist court.

Our first experience was in the Willamette Valley in Oregon and while the set-up was crude, everything was new and clean, and we were so favorably impressed with our first experience we decided to investigate further and it was not long before we began to visualize a profitable future for the court operator who would offer the traveler a service on a par with the better hotels, coupled with the many additional features the better courts just naturally have to offer. Upon this conclusion we decided when we were ready to quit our wanderings we would engage in the court business and during the next six years watched for a suitable location in the many different states through which we traveled from the Atlantic Westward, constantly endeavoring to gain information from the operators of courts where we stopped that would enable

us to avoid many of the pitfalls that are apt to beset one who has never had building experience.

Being constantly on the road we were naturally denied the satisfaction of having home cooked meals until we found there was an occasional court that had cottages with kitchenettes. Quite naturally we made a mental note of these and frequently found it possible to spend an occasional week-end where home cooking could be enjoyed.

After many such experiences, where different kinds of fuel were utilized, we finally stopped in a court in Austin, Texas, where a gas different from any we had ever used was available for heating and cooking. In discuss-





Mr. and Mrs. Smith quit the "road" to build an LPG-equipped auto court.

ing the matter with the management we found he had installed a system which burned liquefied petroleum gas, and he told us that R. L. Edwards, of San Antonio, Texas, had sold it to him. Being so favorably impressed with the outstanding features of this fuel and system, we hied ourselves to San Antonio to interview Mr. Edwards. He explained in detail the underground Hydro-Gas System employing butane.

A Site Is Purchased

After mature deliberation we purchased a site for our court in the month of January, 1935, at Pensacola, Fla., deciding this offered an excellent opportunity for an all-year-round business, and immediately wrote Mr. Edwards that we desired to communicate with the manufacturers of this LPG equipment with the view of securing a plant for our location in N. W. Florida. You will appreciate our disappointment when I tell you that upon investigation we found the com-

pany had not yet secured a satisfactory distributor in the state, so here we were with no gas of any nature available for our use.

Butane Not Then Obtainable

We now found ourselves not only in an awkward but vexatious situation, as the thought of using kerosene stoves for cooking and heating did not appeal to us because in the many places we had stopped that used this fuel the odor was extremely objectionable.

We quit the road March 1, 1935, and on our arrival in Florida we heard of a machine that was said to produce gas from gasoline and I went to considerable expense in checking up on it and had assurances that made me feel it would undoubtedly answer until such time as I could secure the system we desired. In watching the machine installed I found it to be one of the most complicated affairs I had ever seen.

We opened our cottages to the public on July 3, 1935, and in April, 1936, Donald D. Stow, now president of the Hydro-Gas Co. of West Florida, came to Pensacola with a friend on a pleasure trip and subsequent events proved we were very fortunate in having him as a guest.

On one of my numerous excursions to the power plant in my official capacity as "trouble shooter," Mr. Stow noticed I seemed to be having difficulties and came out to sympathize. I told him how badly I had wanted a Hydro-Gas System. In surprise he said: "What do you know about Hydro-Gas?" and I told him we had used it in several Texas courts. By

a strange coincidence it turned out that his brother and sister in San Antonio who had a suburban home had been using this system for two or three years. It also happened that Mr. Stow was looking for a business opening at the time so when he returned to San Antonio he entered the employ of Mr. Edwards, selling these LPG plants, and three months later was back telling me he had taken over this territory and asking if I would give him an order, and the speed with which he got it has made him a little dizzy ever since.

On August 27, 1936, an 1109-gal. Hydro-Gas Systems was installed.

At the time of the installation I

had eight cottages, four of which were equipped with gas ranges and circulating gas heaters and two automatic gas water heaters. All of this equipment is still in use with many additions. I now have 29 radiant and circulating heaters, eight gas ranges and four automatic hot water heaters, the largest being 112 gals. capacity, as well as three Electrolux refrigerators. In addition to this we supply gas to a restaurant located several hundred feet from our property.

Florida has had some unusually unusual weather this Winter, it being so severe it has broken a 54-year record, but we are very thankful to state we did not experience any difficulty.



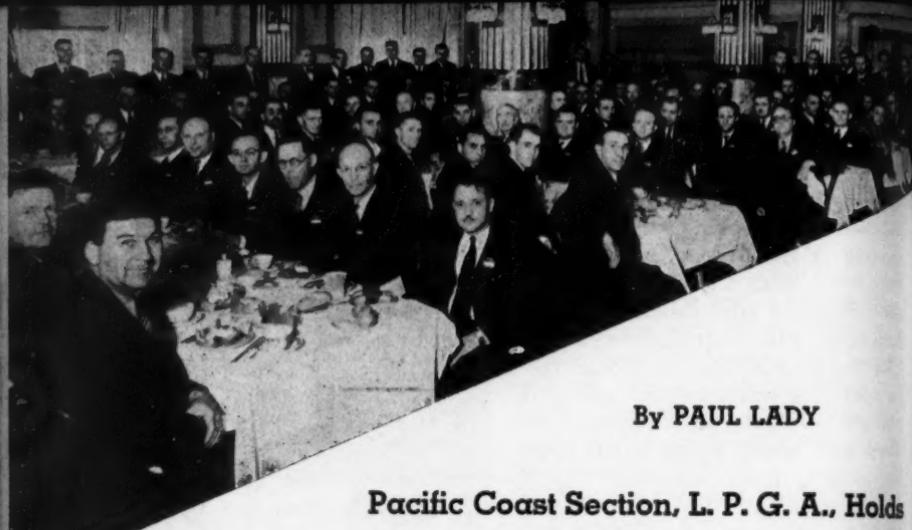
Such comfortable furnishings, including a butane-burning space heater, attract tourists to the Pensacola, Fla., Motor Lodges.

tsfac-
o here
nature
le
ot only
situ-
y kero-
heating
in the
at used
ely ob-

1935,
da we
said to
I went
necking
es that
ubtedly
ould se-
watch-
ound it
licated

to the
April,
resident
st Flor-
. friend
sequent
fortu-

excursions
cial ca-
r. Stow
ng diffi-
pathize.
I want
surprise
w about
we had
ts. By



By PAUL LADY

Pacific Coast Section, L. P. G. A., Holds

Stockton Meeting

WITH "proper education for the handling of liquefied petroleum gas" as the predominant theme of the meeting, 119 men gathered at the Clark Hotel, in Stockton, Calif., April 3, for an all-day get-together and discussion of problems now confronting the Pacific Coast Section of the Liquefied Petroleum Gas Association.

The lobby of the hotel was filled by 9:00 o'clock in the morning with men from every section of the state, all interested in the promotion of a stronger organization within the industry and the proper solving of existing problems.

The education of city and state officials, the public and men in the industry on how to handle and use butane and propane became the most interesting topic of discussion soon after the morning session was called to order by Chairman C. L. Parkhill.

The necessity for the dissemination of more information on safety precautions in transportation, storage and utilization of LP gases, as well as closer cooperation in inspection and control between LPG men and authorities, was covered at length.

Early in the meeting Chairman Parkhill made a summary report on what was accomplished at the Cincinnati meeting of the L.P.G.A. in February. Members were especially interested in the announcements that a minimum membership fee of \$10 a year for companies doing less than \$12,500 gross sales had been put into effect; and that a substantial fund has been appropriated by the L.P.G.A. for Pacific Coast operating expenses. Membership applications totaled 16.

John H. Kunkel, of Los Angeles, was introduced by Mr. Parkhill as the new secretary of the Pacific Coast

Section. He will carry on the active business of the Western section.

Robert Wyker, chairman of the programming committee, suggested that members of the Association in various districts of the Pacific Coast Section area meet from time to time, informally, to discuss the problems and advancement of the industry in order that a better and more complete program be presented at the formal meetings; the formation of a legislation committee to represent the Association before legislative groups; the formation of a publicity committee for the industry; the continuation of membership and educational committees and that the name of the latter be changed to safety committee; and that the legislative committee concern itself with tax legislation.

Firemen Seek Butane Information

Following luncheon, Fire Chief R. E. Thompson of Stockton, pointed out that "firemen all over the country want to be educated on the best methods for handling liquefied petroleum gas and it is up to the Association to teach them."

A merchandising committee was appointed, consisting of Oliver Kilham, American Pipe and Steel Corp., Alhambra, chairman; L. C. Roney, L. C. Roney, Inc., Los Angeles; R. A. Hanson, Livermore; Cliff Annon, Modesto; and Irving J. Symons, Sonora, all in California.

A report on the work of the educational committee was read by Ben Temple. It was announced that the educational pamphlet being prepared by the committee would be sent to Sectional members in the near future.

Following the business session, the one paper delivered at the meeting was given by W. H. Tappan, Tappan Stove Co., Los Angeles, who discussed better merchandising of liquefied petroleum gas equipment, with emphasis on retail appliances.

Selling Is Great Sport

Declaring that "the greatest sport in the world is closing an order," in his opening statement, Mr. Tappan quickly and effectively presented his ideas, drawing on large card illustrations to highlight his talk. It is his belief that one of the major purposes of Association meetings is for members to get an active perspective of their own problems in relation to those of others and the group as a whole.

In answering the question, "Where is the industry today?" the three stages of development through which every industry must go were outlined. They are: 1—Introductory; 2—Promotion; 3—Replacement.

LPG, he said, is in the introductory stage, and the majority of people do not know the industry nor its available benefits. Thus, they must be educated as much as possible, and it is the duty of the dealers and their salesmen to do this job. These men have a good outlook and can promote a great volume of business if they will go out into the field and present their products to the rural consumer.

Mr. Tappan pointed out that in the West dealers have not sought the domestic business as long as have those in other sections of the country and added that there is a big field to develop on the Pacific slope.

With 80% of the family income being spent by women, the LPG dealer must look to the housewife for sales. To do this the salesman must take his equipment into the country and contact the buyer.

In making the sale, Mr. Tappan points out, the salesman must, first, *create dissatisfaction* with present facilities; and, second, *create desire* to use new services or products.

Points to be remembered about sales in the country are: The rural woman wants modern equipment; she knows little or nothing about liquefied petroleum gas; a salesman must go to the housewife with his story. Arrived, he must sell her on 1—The convenience of the fuel; 2—Comfort; 3—Freedom; 4—Enhancement of her reputation as a cook; 5—Importance of gas for cooking to health; 6—Pride

in accomplishment—due to using gas.

Vital points that the LPG appliance salesman should present to the housewife are: 1—Speed in cooking; 2—Cleanliness; 3—Ease in cooking; 4—Certain results; 5—Low operating costs; 6—Reason for buying now.

Good selling, it was pointed out, is intelligent cultivation of the territory; hard work, telling the whole story, and "asking to buy"—many times if necessary. A salesman can agree, if pressed, that electricity is fine for many things, but he should sell the idea of using liquefied petroleum gas on the three big jobs—cooking, water heating, refrigeration.

Mr. Tappan closed with the statement that the LPG salesman has a message that all should hear, and that he should go out into the field and really work his territory.

Speaker Tappan, Chairman Parkhill and Secretary Kunkel, P. C. Section, L. P. G. A.



ing gas
appli-
to the
ooking;
ooking;
erating
ow.
out, is
rritory;
story,
imes if
ree, if
ne for
ell the
um gas
water

state-
has a
d that
d and

BELOW: Skelgas trailer in front of Rinker's Hardware, Anderson, Ind., showing H. L. Jones, G. H. Bishop, Thurman Rinker, C. R. Winship, Harwood Smith, and (in rear) Jack Barksdale. **CENTER:** Interior of large trailer, showing two ranges. **AT TOP:** Ten installations were sold from this small trailer in February by R. Toppin (shown in picture) and his father-partner, O. C. Toppin.



By C. R. WINSHIP

Skelgas Company,
Anderson, Indiana



If Prospects Won't Come to Mohammed...

TRAILERS are not miracle sales makers. They require planned and conscientious work. If these two requirements are followed, the trailer is certainly a sales tool of unlimited possibilities. In Skelgas district No. 33 in Indiana we are now using two types of trailers to promote sales and find both well worth the money and effort put forth for their operation.

The large 22-ft. trailer is owned by the Skelgas Co. and used by all the dealers for sales drives. It is equipped with a record player and public address system which operates on AC or DC current. When parked in front of a store 110 AC current is used and when in the field DC current is supplied by the car battery. There are five ranges and Skelgas equipments for demonstration pur-

poses in the trailer. This trailer serves three purposes, first as a drawing card when parked in front of the store where prospective customers are signed on registration cards and calls arranged for the future; second, for selling in smaller communities with a sales crew and to follow up registration card prospects, and, third, as a mobile sign board. In traveling throughout the district a great number of people see it and thus are introduced to the product.

The smaller trailer is owned by the individual dealers. This trailer is used for sales and service in their territory. There is room for four ranges and cylinders of Skelgas. The salesman hooks onto the trailer and can sell and install without returning to the store. It also serves as an advertise-

ment in the immediate vicinity in its daily travels and can be used at county fairs and farm sales.

In selling today you must sell the romance in your product. There is an air of romance about a trailer that is contagious. The prospect will catch this and be in a more receptive mood for your sales story. You also can apply the philosophy of the ancient seer who said that "if the mountain will not come to Mohammed, Mohammed will go to the mountain," and in that manner eliminate the old stall of prospects wanting to come into the store and see the stoves before they buy. The gain realized from the proper operation of a trailer will pay dividends and continue to pay them as long as it is used.



Safety Orders in California Are Now Being Revised

Committee meetings have been held in April in both San Francisco and Los Angeles by the California Industrial Accident Commission in its efforts to revise existing safety codes so that they will meet changing conditions and conform more accurately to the welfare of the public and dealers, alike.

All sessions, presided over by C. H. Fry, chief of the Bureau of Industrial Accident Prevention, were well attended by representatives of fuel producers, manufacturers of equipment and appliances and retail dealers, who were given the privilege of making recommendations for code changes and were permitted to discuss the merits of sections of the present regulations as every one was taken up in turn.

These meetings will be continued with a joint conference of men from northern and southern California in the Pacific Southwest Bldg., Fresno, Calif., beginning April 29 and probably extending through April 30. The original date of April 22 for a meeting in San Francisco has been cancelled in favor of Fresno.

Forty-Six States in Union Enter Urban Foods Project

Every state in the Union, except two, representing more than 8000 students and 500 sponsoring home economics teachers, has signed up for the educational Foods Project-Contest which is being conducted in urban schools throughout the country, it is announced by Miss Jane Tiffany Wagner, director of Home Economics for Servel, Inc. Servel is joint-sponsor of the project-contest with the home economics magazine, *The Student Home Economist*. Project entries were to close May 1. County, state and national winners are to be announced in latter part of June.

The largest number of entries came from Texas, where 738 students and 33 sponsoring home economic teachers are now working on the project-contest. The next largest number of entries came from Alabama (452) and the third largest, from Georgia (386). The two states not represented are Rhode Island and Delaware.

The project-contest covers home, field and class work on the purchasing, preparing and preservation of foods. Emphasis is being placed on proper food protection through modern methods of refrigeration. Throughout, individual achievement is being stressed, and the aim is to make more vivid and interesting to the students, food problems and situations right in their own homes. This becomes very practical.

This Urban Project is similar to the 4-H Club Food Preparation Project which Servel has sponsored for the past five years for the farm youth of the nation.

The national student winner and her teacher will receive an educational trip to Washington, D. C. In addition, the teacher will receive for her school laboratory a new gas refrigerator.

Each state student winner will receive a cash award of \$25 and an insignia bar pin. The teacher may choose for her school laboratory either \$25 to be used on the purchase of any piece of laboratory equipment, other than a refrigerator, or a certificate of credit for \$50 to be applied to the purchase of a gas refrigerator. Each school winner will receive an insignia bar pin as a prize.

N. G. A. A. Convention May 15 - 17

THE nineteenth annual convention of the Natural Gasoline Association of America will open in Tulsa, Okla., on the morning of May 15 with an address by George P. Bunn, of the Phillips Petroleum Co., and president of the Association. The session will continue for three days, with an informal dance on the evening of

May 16 which will be given by the Natural Gasoline Supply Men's Association. Courtesy luncheons will also be given by the same organization on May 16 and 17.

The "Operating Kinks" session on the third day, morning and afternoon, is expected to be one of extraordinary interest and will be climaxed by the presentation of prizes to those who enter the most valuable and unique unpatented devices for saving labor and improving plant operation.

Following the regular convention there will be a preview of the International Petroleum Exposition on Friday afternoon and Saturday morning for registered delegates, though the exposition does not officially open until Saturday noon, May 18.

The following tentative convention program, as announced by Secretary

William F. Lowe, includes several important papers of much interest to those engaged in the liquefied petroleum gas industry:

Wednesday, May 15

"New Test Methods and Specifications for Liquefied Petroleum Gases"—C. R. Williams, Continental Oil Co.; chairman of the Technical Committee. Presenting new tentative standards for these products and reviewing other activities of the Technical Committee.)

"The N.G.A.A. Standard Form of Castinghead Gas Contract"—James E. Allison, Hanlon-Buchanan, Inc.; chairman of the Gas Contract Committee. (A report of Committee studies of the 1939 revised contract form.)

Address: H. H. Anderson, vice president, Shell Oil Co., Inc.

"The Economics of Liquefied Petroleum Gases"—James W. Vaiden, Skelly Oil Co. (What the manufacture of these "by products" of a natural gasoline plant represents in terms of additional investment, operating cost and marketing expense.)

"The Value of Standardization to the Pacific Coast Natural Gasoline Industry"—W. W. Robinson, Jr., The Texas Co. of California. (Mr. Robinson is chairman of the Technical Committee of the California Natural Gasoline Association and will review the work done by that group and its significance in California operations.)

Thursday, May 16

"Revised Charcoal Method for Testing Gas"—H. L. Oder, Cities Service Oil Co.; chairman of the Gas Testing Committee. (Presenting a modernized tentative version of this field method for determining the gasoline content of natural gas.)

"Neo-Hexane, the Fuel of Tomorrow"—R. C. Alden, Phillips Petroleum Co. (The combination by alkylation of light



GEO. P. BUNN

MAY 1940

paraffin hydrocarbons such as ethane, propane and butane with olefins to produce neo-hexane, an iso-paraffin, high octane number, aviation fuel.)

"The Position of Natural Gasoline in Conservation"—H. B. Bernard, M. E. Consultant, Tulsa. (The value of natural gasoline operations to the producer, the oil industry and to the nation.)

"Developments in Gas Recycling Plants"—E. E. DeBach, Corpus Christi Corp. (A review of mechanical developments, including high pressure absorption, in one of the most recent phases of natural gasoline line operations.)

"The Measurement of Gas Flow Under High Pressure"—G. G. Brown, University of Michigan. (Presenting a method for simple calculation of the deviations from Boyle's law of high pressure gaseous mixture based on the application of theoretical data to actual field measurements.)

Friday, May 17

"Operating Kinks" Session — Devoted to the presentation of original ideas submitted by field, plant and laboratory men. Entirely aside from the fact that it is a prize contest, this session is most valuable to operating men because of the discussions and the ideas presented.

"Elimination of Hydrate Troubles"—E. G. Hammerschmidt, Texoma Natural Gas Co. (Reviewing present successful methods for dehydration of gas and outlining the relative merits of various treating agents.)

Presentation of "Kinks" prizes.

The Hanlon Award

One of the notable events of the session will be the presentation of the Hanlon Award for outstanding service to the natural gasoline industry. Last year it was given to George G. Oberfell in recognition of valuable research contributions to the liquefied petroleum gas industry.



F. DeLARZELERE



W. G. PETTY, JR.

DeLarzelere-Petty Partnership To Distribute Butane Systems

The DeLarzelere-Petty Equipment Co. Inc., with headquarters at 419 South Main St., Memphis, Tenn., has been organized recently by the partnership agreement of Frank DeLarzelere and W. G. Petty, Jr.

The new company represents two manufacturing plants—the General Steel Tank Co., Birmingham, Ala., which manufactures Hydro-Gas Systems, and the Arkansas Foundry Co., Little Rock, Ark., manufacturers of the Ever-Ready Butane Gas System. The DeLarzelere-Petty company is also sales agent for the butane-propane products of the Skelly Oil Co., Tulsa, Okla., and expects to have the factory representation of a line of space heater ranges, hot water heaters and gas burners. The area covered by the new company will include Louisiana, Arkansas, Missouri, Mississippi, Tennessee, Kentucky, Alabama, Georgia, Florida, North Carolina, and South Carolina. Exclusive retail distributors will be appointed.

Mr. DeLarzelere was formerly district sales manager for the Bastian-Blessing Co., Chicago, covering the western part of Pennsylvania, southern Illinois, Ohio, Indiana, Kentucky and West Virginia. Prior to his association with Bastian-Blessing, he was vice president and sales manager of the National Butane Gas Co., Memphis.

Mr. Petty has been associated with his father for the past several years in the retail sales organization known as W. G. Petty & Son Butane Co. of Memphis.

BIRMINGHAM MEETING

Of Southern Section, L. P. G. A.

THE spring meeting of the Southern Section of the Liquefied Petroleum Gas Association, scheduled for April 29-30 in Birmingham, Ala., will listen to papers of unusual interest to Southern dealers, according to Chairman M. E. McKay, who will open the session, and Secretary R. L. Edwards, who has had charge of detail arrangements.

Karl Landgrebe, who will appear on the program, is prominently connected with the Tennessee Coal, Iron and Railroad Co., a subsidiary of the United States Steel Corp. Mr. Landgrebe's company is one of the greatest industrial enterprises in the South. He is a frequent and much sought after speaker at all gatherings such as this. His subject is, "The South and Its Possibilities."

Metering of liquefied petroleum gases is engaging the attention at this time probably of each and every dealer in the South. A presentation of this subject by J. J. Kropp, who represents a company very active in this type of operation, the Ralph N. Brodie Co., Inc., promises to be extremely informative.

Hugh White, president of the Alabama Public Service Commission, has been invited to discuss the South's freight rate problem. He is active in the work of the Southern Governor's Conference and has been in close touch with work of the Conference since its origin. He was especially designated by Governor Frank M.

Dixon, of Alabama, to discuss this interesting topic for the convention.

"Facts About Your Fuel" will be presented by Walter H. Hoagland, Technical Products Department, Shell Oil Co., Inc.; Frank R. Fetherston, secretary of the L.P.G.A., will talk on Association work, and E. Carl Sorby, promotion director of Geo. D. Roper Corp., will have as his subject the topic of "Selling." W. Cooper Green, president of the City Commission, will welcome all delegates.

"The Question Box" will afford many members an opportunity to obtain information from the experiences of others in the industry.

Equipment Displays

Equipment booths will permit manufacturers to display their products throughout the two-day session, except during the hours when papers are being read.

The \$5 registration fee includes luncheons on both days and the dinner and dance on the second day. Members have been specially urged to bring their wives in order that the occasion may be "properly feminized."



LPG Company for May, Texas

The Central Texas Gas Co., of May, Texas, has filed application for permission to engage in the gas power industry. The capital stock is announced as \$12,000 and the incorporators are Horace E. White, Colquit E. Williams and H. H. Williams.



Warming the W

LPG Invades
the Lonely
Vastnesses
of the
Arizona Deserts

ABOVE: The Painted Desert Badlands, weird, spectacular monuments of Nature at work with wind and rain and sun, enlivened by the lovely colorings of a rarified atmosphere.

BETWEEN: "Old Faithful" petrified log in the Rainbow Forest that for millions of years has awaited man's coming to tell him of a day when great forests covered the now barren lands. (Photos through courtesy of the United States Department of the Interior.)



the Desert With Butane

TAKING the convenience, comfort and economy of metropolitan gas service to scattered homes, business houses and tourist cottages throughout the Painted Desert and Petrified Forest region of northern Arizona is the fulfillment of a long aspiration of the A. & B. Schuster Co., of Holbrook, Ariz., according to a recent statement by Fred Schuster.

He said further that such a feat is not just a merchandising achievement for his company but rather the rendering of a service that is much in step with the modern trend to better living conditions in the sparsely settled districts of the West. Notable among the many, is an installation now being made in the Petrified Forest for the United States Government.

Bu-Gas is the fuel distributed in the farthest rural sections of that roman-

tic desert country, where it is hailed now as an indispensable convenience. The territory embraces both Navajo and Apache counties, which are served from the centrally located bulk plant of Holbrook, Ariz. There is no natural gas available to Holbrook.

Because of the low temperatures that sometimes prevail in the winter in northern Arizona, all installations are of the underground Hydro-Gas type. In addition to selling the gas, Schuster Co. carries a complete line of appliances adapted for use with LPG, including ranges, refrigerators, furnaces, circulators, automatic water heaters, and carburetion equipment for lighting plants, tractors and trucks.

Selling of gas service and appliances is accomplished largely through personal contacts by salesmen in the field. The greatest individual aids are customer boosts to neighbors by satisfied users, but advertising on sign boards and in newspapers and well placarded delivery trucks covering the territory from one end to the other all the time have brought fine returns. In spite of the long distances to be covered, delivery costs have been kept down by establishing regular runs and helping consumers to anticipate their needs for supplies of gas.

One of the delivery tank trucks that carries gas to Uncle Sam's men who live in the northern Arizona deserts.



SELLING

Vitalize Your Sales

HOW can you insure healthy sales? Well, how do you insure a healthy body? By eating right! The body requires vitamins to function properly. If you want to stay healthy, you must watch your diet. Why not try the same thing with your sales? Try feeding them the proper vitalizers and see if they, too, won't stay healthy and vigorous.

A Saleshealthy Smile

There is Vitalizer A, for instance; that is the ingredient found in an agreeable smile. It gives you a bright outlook on life, breaks down the chill of sales resistance, and is essential to



Smile and make your prospect happy.

sales health. A sour puss will kill off a sale in no time at all.

This is a vitalizer you can't store; you have to have fresh supplies of it every day, rain or shine. The sun may not be out, last night's dinner may not have agreed with you, but if you

smile you'll be amazed how it will change the aspect of things, and bring orders flocking to your salesbook.

Knowledge Is Power

Then there is Vitalizer B, the weight building vitalizer. This is secured by keeping posted on what's do-



The midnight oil lubricates sales.

ing in your business. A little of it can be obtained by reading the literature that is prepared for you. But real sales weight may be added only by studying that literature, making it part of your sales story.

Salesmen who are real heavyweights in their field are the ones who think about their job 24 hours a day. There is lots of Vitalizer B in good old fashioned midnight oil. Instead of just riffling through the books and pamphlets which have been prepared for your information and guidance with so much thought, try a little homework with them.

Keep Prospecting for Prospects

The "C" in the next vitalizer stands for *contacts*. Without contacts, your sales slough off, get weak and uncertain. Even though you may have plenty of Vitalizer A and B, without contacts you can't keep up your sales.



Friends acquired mean sales transpired.

There is the old story of the colored man fishing in the wash tub in his backyard. When someone pointed out he couldn't hope to catch any fish there, he replied: "Yassuh, Ah knows dat, but it's so convenient."

It may be very convenient for you to fish for prospects in the same backyard every day, but you can't expect to catch any sales.

Tales Make Sales

Vitalizer D is the dramatic vitalizer that stimulates sales imagination. It is the vitalizer that pulls your presentation out of the rut of the commonplace and the stereotyped, and makes it new and arresting. It is the vitalizer that gave an accident insurance salesman the imagination to show his prospect an itemized hospital bill



The play's the thing that makes the cash register ring.

of an accident case. It is the vitalizer that gives every successful salesman the imaginative power to make his sales story dramatic and alive. Take lots of Vitalizer D for healthy sales.

Ask Early and Often

And then comes Vitalizer E, the "eventually-why-not-now" vitalizer that goes straight to the spine and gives the salesman the necessary backbone to ask his prospect to buy. No matter how convincingly you demonstrate the merits of your merchandise, people are not going to buy unless you come right out and ask them to. If you are afraid to ask them, then your sales need a generous treatment of Vitalizer E to give you courage to ask for a commitment early and often.



Faint heart never won fair sale.

Automatic Gas Co., Inc., Grows To 3600 Customers in Five Years

The employees of Automatic Gas Co., Inc., of Tyler, Texas, gathered at the home office on March 1 for a general discussion of sales and service problems and laid plans for the extension of business during remainder of 1940. (Photo below.)

The company now has two branch offices, one at Sulphur Springs, and the other at Madisonville, both in Texas.

Starting in 1935, with one small 150-gal. service tank truck that was mounted on a Ford pick-up chassis, the equipment has grown until it now consists of 10 butane delivery tank trucks of 1100-gals. each, mounted on eight foot trucks, stake body installation trucks, five automobiles, and one trailer kitchen for home demonstrations. All equipment used is equipped with butane carburetors, pumps and the ticket type of meters.

The company is now servicing 3600 customers and installing an average of 125 underground butane Automatic Gas Systems per month.



Schallhorn Hardware Co. Opens Service Office in De Witt, Ark.

The W. F. Schallhorn Hardware Co. has opened a new Zero butane servicing department in De Witt, Ark., from which

The original of this picture of employees and equipment of Automatic Gas Co., Inc. showed three and one-half times as many individuals and trucks, but it was impossible to reproduce them all. It takes a big crew to sell, install and service 125 new jobs every month, with a total of 3600 customers.

all of Arkansas county will be covered. Regular route trips will be made to Ulm, Stuttgart, Reydell, Gillett and Bayou Meto.

Equipment, consisting of a 4000-gal. storage tank and a 450-gal. delivery tank truck, has been installed at a cost of approximately \$3000. Gas is hauled to De Witt directly from the refineries by a 30,000-gal. transport truck.

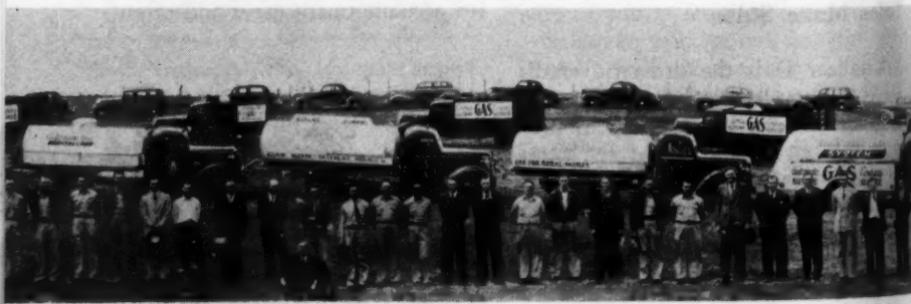
Zero butane gas was introduced into Arkansas county about five years ago by the Schallhorn Hardware Co. Now about 90 domestic installations are serviced.



Four-Color Book Published To Aid Sales Promoters

A four-color, 16-page booklet, "Let Me Tell You About My Modern All-Gas Home," prepared by Evans-Winter-Hebb, Inc., Detroit, Mich., publishers of the gas utility magazine, *Today's Home*, is being made available to gas company salesmen, home service girls and promotion managers through the courtesy of M. W. Welty, advertising manager of the Philgas Department, Phillips Petroleum Co., Detroit. With few words and many illustrations, the book portrays the use of gas for the four big jobs and presents the sales story step by step.

Copies may be obtained from Evans-Winter-Hebb, at a cost of \$75 per 1000.



New Safety Code for Oklahoma

By O. D. HALL

COMPREHENSIVE rules, regulations and specifications governing construction and installation of equipment used in handling liquefied petroleum gases were promulgated by the Oklahoma Corporation Commission in Order No. 13,580, dated March 22, 1940. They will become effective May 1, 1940, and were adopted pursuant to an act of the legislature approved April 25, 1939. Their adoption will have an important bearing upon the industry in the State.

Many of the regulations suggested in a hearing before the commission on Dec. 14, 1939, were incorporated in the final order. It primarily is designed to promote greater safety in the handling of liquefied petroleum gases, but also incorporates rules which, if properly enforced, should result in better service to consumers and further industry stabilization.

Code Result of Long Study

The regulations contain many sections and paragraphs and represent the results of months of study by leaders of the industry in collaboration with the Corporation Commission.

Any person who installs LPG systems must be regularly licensed by the Corporation Commission for such purpose; must give bond for \$2500 and, at the time of installation, must furnish to the customer an accurate tank table from the manufacturer and a certificate which states that the

equipment has been installed according to the rules and regulations of the Commission and the laws of Oklahoma. Each certificate shall show the license number of the person making the installation. Any person who fails to comply with the regulations is subject to a maximum fine of \$500 for each day of violation.

Must Submit Plans

All industrial installations of LPG tanks of a movable type, including skid tanks and all above-ground storage tanks having a water capacity of over 600 gals., installed or being installed before the effective date of the new regulations, must be made to comply with provisions of Section One of the regulations which, among other things, provides for submission of plans and specifications to the inspection department authorized by the corporation commission. Major devices, such as vaporizers, carburetors, relief valves and regulators, which go to make up a complete assembly, shall have their correctness as to design, construction and performance, certified for testing and listing by Underwriters Laboratories, Inc., or through tests by any other competent agency certified by the Commission.

Use of some approved odorizing agent is required, so leaks or escape of the LPG may be more easily detected. All piping and connections, used in the assembly, shall be of ap-

proved type and suitable for use with liquefied petroleum gases and designed for not less than the maximum pressure to which they may be subjected.

The new regulations require that all vessels of the foregoing types, fabricated or in service before the effective date of the rules, before being approved for service, or continued in service, shall be inspected by an inspector commissioned by the National Board of Pressure Vessel Inspectors, who is required to determine the maximum allowable working pressure of such vessels in accordance with paragraph U-20 of the A.S.M.E., unfired pressure vessel code. If this pressure is less than 80 lbs. per sq. in. the vessel shall no longer be used for storage or transportation of any LP gas. Vessels with a greater working pressure shall be hydrostatically tested at a pressure equal to 150% of the calculated working pressure, in accordance with paragraph U-64 of the A.S.M.E. code, unless satisfactory evidence is available showing proper testing at time of manufacture. The shell or head thickness of any container must not be less than 3/16-in.

Tests Before Re-Installation

The regulations also provide for testing containers once installed underground and prohibits their re-installation for use unless they can stand the hydrostatic test, at the pressure specified in the original hydrostatic test, as required by the code under which they were constructed, and show no evidence of serious corrosion or other damage.

The regulations require that storage containers shall be constructed in ac-

cordance with the unfired vessel code of the A.S.M.E., or in accordance with the A.P.I.-A.S.M.E. code, excepting that compliance with the following shall not be required: Paragraphs U-2 to U-10, inclusive; paragraphs W-601 to W-606 inclusive, and Section 1 and appendix to Section 1 of A.P.I.-A.S.M.E. code. All vessels must be inspected during construction.

Other sections of the regulations deal with design, construction and operation of automobile tank trucks and tank trailers; design and operation of equipment for use of LPG as a motor fuel; installation and operation of LPG systems using cylinders or drums of ICC construction; installation of LPG systems for welding, cutting and torch heating, and domestic appliances.

A. G. A. Approval Required

All domestic appliances, installed after the effective date of the new regulations for LPG use must have the approval of the A.G.A. Testing Laboratories and shall bear their seal of approval, if equipped with an automatic device controlling the flow of the gas to the gas burner. Exceptions may be made if the appliances have been approved by the Corporation Commission or its designated agent.

Another safety regulation requires that all piping must be so elevated that the liquid will drain from the appliances and toward the storage tank. Satisfactory and adequate provision must be made for trapping any of the liquid in the lines.

Section eight requires that all units used in transportation must be officially calibrated by Tax Commission.

Increase your **PROFIT** by installing **ECONOMY** **Dual Oven Ranges**



Above--New streamlined dual-oven ECONOMY combination range, ideal for home installation, approved by the American Gas Association Testing Laboratory for every kind of gas. Send for catalog showing specifications, also complete line of ECONOMY Ranges.

Before You Order Another Range

be sure to get the new ECONOMY Catalog. It's FREE, of course. For convenience, mark and tear out coupon at right, paste on postcard or drop in envelope, and mail.

SEND FOR 1940 CATALOG

Performance builds Profit! Performance is the cornerstone of every successful L. P. G. business. And ECONOMY Dual Oven Combination Ranges insure the dependable performance of your installations.

ECONOMY makes a complete line of Household and Commercial Ranges. Engineered particularly for propane and butane gas. Designed right, priced right, made right—ever since 1849.

Gets 7 Out of 10

L. D. Beckett, distributor at Cameron, Mo., reports: "We landed 7 out of every 10 commercial jobs in our area this past year. ECONOMY Ranges are largely responsible. Each ECONOMY installation paves the way for more sales."

Make today's installations help build tomorrow's sales. Get the facts about ECONOMY Ranges. Send coupon for 1940 catalogs.

Comstock-Castle Stove Co.
Quincy, Illinois

Send your 1940 catalog on
 Household Ranges
 Commercial Ranges

Name _____

Address _____

New Louisiana Dealer Group Meets in First Convention

THE dealers in liquefied petroleum gas, equipment and appliances in Louisiana, who recently organized for the advancement of the industry in their State, met in their first convention at Baton Rouge, La., on March 28 in the State Capital building. Officially known as the Louisiana Butane Dealers Association, the group is headed by J. R. Holicer, Holicer Gas Co., Inc., of Shreveport, La., as president, and Lee Miller, Plaquemine, La., as secretary. More than 50 dealers attended.

The meeting was opened by President Holicer, who requested W. P. Thomas, director of the gas division of the Louisiana Public Service Commission, to act as chairman. Mr. Thomas introduced the first speaker, L. C. Parker, Special Assistant Attorney General, who welcomed the assembly in behalf of the Louisiana Public Service Commission and the other

departments of the State. The dealers responded very ably through R. Leslie Kiper, Kiper Hardware & Supply Co., Monroe, La. Mr. Kiper recited the benefits to be derived and the assistance already given to Retail Dealerships by the present Regulatory body. H. E. Perry, sales manager of Mosher Steel Co., Houston, Texas, spoke in behalf of the manufacturers of tanks and containers, complimenting the progress made in the butane gas industry in Louisiana, and endorsing the plan of organization. The appliance distributors were represented by L. R. Maxwell, representative of General Water Heater Corp., Dallas, Texas, who stated that the appliance division of the industry had already accepted its responsibility and was ready to throw its influence behind the problems confronting the utilization of liquefied petroleum.

J. H. McLoughlin, secretary of the



The Louisiana Butane Gas Dealers Association holds its first meeting. In front row, beginning fifth from left, are W. P. Thomas, director of State Gas Division; Lee Miller, secretary-treasurer; and J. R. Holicer, president.



Rx FOR
HEADACHES
CAUSED BY STUFF-
ING BOXES — USE
ONE BYRON
JACKSON

STUFFINGBOXLESS PUMP
for Immediate and Permanent Relief

THE Byron Jackson Stuffingboxless Pump is designed for easy application to all services requiring the pumping of highly volatile liquids such as gasoline, butane, propane, and similar liquids at temperatures not exceeding 150° F. This pump is especially recommended for installation in isolated or hazardous locations, as its construction requires no adjustments, attendance, or shelter, and eliminates the possibility of vandalism.

The Stuffingboxless Pump has an almost unlimited range of head and capacity from 15 G.P.M. upward. High suction and discharge pressures offer no problem as the unit is completely sealed in a heavy steel barrel with the pumped liquid isolated from the atmosphere.

BYRON JACKSON CO.

Dpt. OS-10 Box 2017, Terminal Annex
LOS ANGELES, CALIFORNIA
FACTORIES: Berkeley and Los
Angeles, Calif., Bethlehem, Pa.
SALES OFFICES: New York, Chicago,
Houston, Salt Lake City, Utah;
Fresno, Calif.

Send today for complete
details as to how the
STUFFINGBOXLESS Pump
operates — no cost or
obligation is incurred.



Baton Rouge Chamber of Commerce, discussed the importance of cooperation and "Benefits of Organization."

T. G. Tackett, sales manager of National Butane Gas Co., Memphis, Tenn., talked on "Classes of Containers and Hydro-Carbon Mixtures," explaining the importance of sufficient volatility, but stressed the more important item of keeping the physical properties of the fuel within the working pressures of the containers.

Personnel Importance

James B. Hodge, sales manager of Gulf States Utilities Co., natural gas distributors in the Baton Rouge area, gave a talk on the "Cost and Value of Service Calls." Mr. Hodge first touched upon the importance of engaging the proper personnel, schooling the employes in their work, and the establishment of confidence in their employers, and then showed the value of contact and diplomacy of the employes with the customers.

P. J. Hoagland, of Warren Petroleum Co., Tulsa, Okla., talked on the production, sources of supply and properties of butane and propane. Ralph G. Abbott, engineer, of Ensign Carburetor Co., Dallas, Texas, told of the expansive increase of butane as a motor fuel and explained the principles of the modern equipment for such use.

The meeting was then turned back to President Holicer, who conducted a discussion on the problems that are confronting the butane industry in Louisiana, and several committees were appointed for the research and study of data for the improvement of the existing conditions.



Showing a part of the appliance showroom and offices of Butane Consolidated, recently opened in Oklahoma City, Okla. Seated in the rear is C. G. Berry, co-owner.

Butane Equipment Installed In Several Oklahoma Schools

Several important butane gas installations in federal government and school buildings have been made recently by Butane Consolidated, Oklahoma City, Okla., W. L. Elkin and C. G. Berry, owners.

Government installations include a 1000-gal. butane gas system in the Seneca Indian school, at Wyandotte, Okla. The system was installed in the main dining room and kitchen for use in cooking.

A recent school installation was made in Greenfield consolidated school, at Greenfield, Okla. This included a 1000-gal. tank constructed to furnish one million B.t.u.'s per hour for heating and for cooking in the domestic science class. Clow Gasteam radiators were installed as the heating units. A third is that of the "101 Ranch" youth project.

"We are particularly proud of our government and school installations," said Mr. Elkin. "No one fools the United States government when it comes to installing equipment. Every school installation is inspected by the state fire marshal's office. A child in the rural districts, even though beyond the gas mains, may have the privilege today of studying in a school room that is kept at one controlled temperature, which promotes health and knowledge."



MAKE A BIG SALES SPLASH THIS YEAR!

with the new
AGP BUDGET
GAS-FIRED AUTOMATIC
STORAGE WATER HEATER

Built especially for use with bottled Gas

NOW YOU can go after the Spring Water Heater business in a big way! For the new **AGP Budget GAS-FIRED Storage Water Heater** has more features and more talking points to help you win sales and increase your profits.

Low in cost, it is specially designed for use with liquefied petroleum gases and is available with heavy galvanized steel tanks of 15, 20, 30 and 40 gallon capacities. Jacket is beautifully finished in white enamel with aluminum trim. The new **AGP Budget** is sturdily built for years of dependable, economical service. Standard equipment includes snap action thermostat that provides for 100% shut-off to main burner and pilot in event of pilot failure and many other quality features.

Write today for full information and for the name of our nearest sales office.

AMERICAN
HEATING EQUIPMENT
COSTS NO MORE THAN OTHERS



**AMERICAN & Standard
RADIATOR & Sanitary
CORPORATION**

NEW YORK

Cast Iron & Steel Boilers & Furnaces • Radiators
Plumbing Fixtures & Fittings • Air Conditioners
Water Heaters • Copper Pipe & Fittings

Heating Accessories

Copyright 1940, American Radiator and Standard Sanitary Corporation



A Manual for Mr. Average Salesman

SIX months ago in Southwestern Ohio, a company, calling itself The Handigas Company of Ohio, established its headquarters in Lebanon, and with a limited amount of working capital, began distributing liquefied petroleum gas. In the period from November, 1939, to the end of March, 1940, 122 installations were made.

The company's success, according to Ward Talcott, vice president, has been due largely to the emphasis placed on stability and the acquiring of a dependable type of customer, at the same time maintaining a sensible ratio of expense in proportion to income.

To instill these policies in their salesmen, and to bring them to the attention of potential consumers, the company prepared a 16-page sales manual for each salesman. "This manual," states Mr. Talcott, "was created to enable Mr. Average Salesman to tell a chronological and interesting

story about Handigas service, and substantiate his statements with copy and line drawings. We feel this manual insures good customer relations in the future, overcomes misunderstandings, and eliminates customers' claims of misrepresentation; also we have found it very helpful for new salesmen."

The first few pages of the book present a brief statement of the scope of the LPG industry, and a short description of how the Handigas company distributes its gas from branch fuel stations, usually independent, located at convenient places throughout the territory. Tank-truck delivery is available where the consumption justifies.

Next in the manual is a description in simple terms of the four types of service offered by the Handigas company—self service, consisting of two 20-lb. tanks of gas attached to the outside of the customers house and refilled by the customer at one of the



"Handigas" officials and service men before their Lebanon, Ohio, office.

Announcing the New

BU-PRO-FIRE Gas Heaters

BUILT EXCLUSIVELY FOR BOTTLED GAS



The line the liquefied Petroleum gas industry has been wanting.

Life time Porcelain Enamel cabinets on all models.

Model illustrated made in three sizes, equipped with bunsen type burner developed especially for Bottled gases.

REALIZING that the Bottled gas industry as a whole has been handicapped by the lack of adequate heating units that were designed to fit the requirements of this field, the Tennessee Enamel Mfg. Company, manufacturers of the nationally famous Temco - Circu-Ray gas heaters, has developed a complete, new line of radiant and circulating heaters exclusively for liquefied petroleum.

Be sure to see the BU-PRO-FIRE line, including floor furnaces, Radiant, Vented Radiant and circulating heaters.

Write for illustrated folder in colors giving complete details. Sent without obligation.

BU-PRO-FIRE

DIVISION OF TENNESSEE ENAMEL MANUFACTURING COMPANY
Nashville, Tennessee

fuel stations; small cylinder delivery service, similar to self service except that the tanks are delivered upon request; tank truck delivery for restaurants, hotels, etc., where 100- to 1000-gal. tanks are installed; and tank car delivery for storage tanks up to 20,000 gals. Each of the four types of service is illustrated by a pen-and-ink



Domestic installations like this "Handigas" one are estimated to enhance property values by from \$300 to \$500, say Ohio real estate sub-dividers.

drawing. More pen-and-ink drawings in the manual illustrate the source and physical properties of liquefied petroleum gases.

The natural advantages of LPG, together with a table of comparative heat costs of different fuels, are outlined and pictured on the next few pages of the booklet. The qualities of the fuel that are stressed particularly for the customer are its economy, cleanliness, convenience, flexibility, dependability and safety.

The last few pages of the manual contain pictures of actual domestic in-

stallations made, testimonial letters, a list of customers, and a description of a Roper range designed for use with LPG.

Up to the present time, Mr. Talcott reports, the company's operations have been carried on in a small way for experimental purposes, to determine and prove the buyers' acceptance to operating plans and policies. Based on experience to date, the company feels it is ready to expand its efforts into full-fledged operation throughout southwestern Ohio.



Granberg Equipment Co., Inc., Erects New Plant and Office

Increasing demand for its Granco pumps and other devices is one of the reasons given for the erection of a new plant and office building by Granberg Equipment Co., Inc., at 1308 67th Street, Oakland, Calif. It was designed especially to meet the concern's manufacturing requirements.

"For some time," said Robert W. Lindsay, vice-president and general manager, "we were quite cramped in our old quarters. Moreover, the building was not suitable for our special manufacturing operations. We have, therefore, erected this new structure. Arrangements have been made for additions to be built as needed.

"The building comprises office space, experimental shop and storage space for a limited amount of our production, as well as manufacturing space."



Gas Company Incorporates

Organized to engage in constructing pipe lines for butane gas, the Consumers Butane Gas Co., Inc., of Dallas, Texas, filed articles of incorporation in March at San Antonio, Texas.

The capitalization is announced as \$5,000, and the incorporators are Mrs. J. J. Bookout, Rhodes S. Baker, Jr., and John Bookout, all of Dallas, Texas.

-Two-way satisfaction with Reliance Regulators:



The perfect efficiency of Reliance Regulators in liquid petroleum gas service makes satisfied customers at the buying end and saves time, work, worry and expense at the supplying end of your business.

Sensitive burners on appliances always get gas at the right pressure irrespective of the load or the generating capacity of the cylinders. Customers appreciate the Reliance Automatic Indicator that tells when

to order more gas, thus saving emergency deliveries.

Uniform outlet pressures under all conditions insure satisfactory service, minimize maintenance costs and build customer good will.

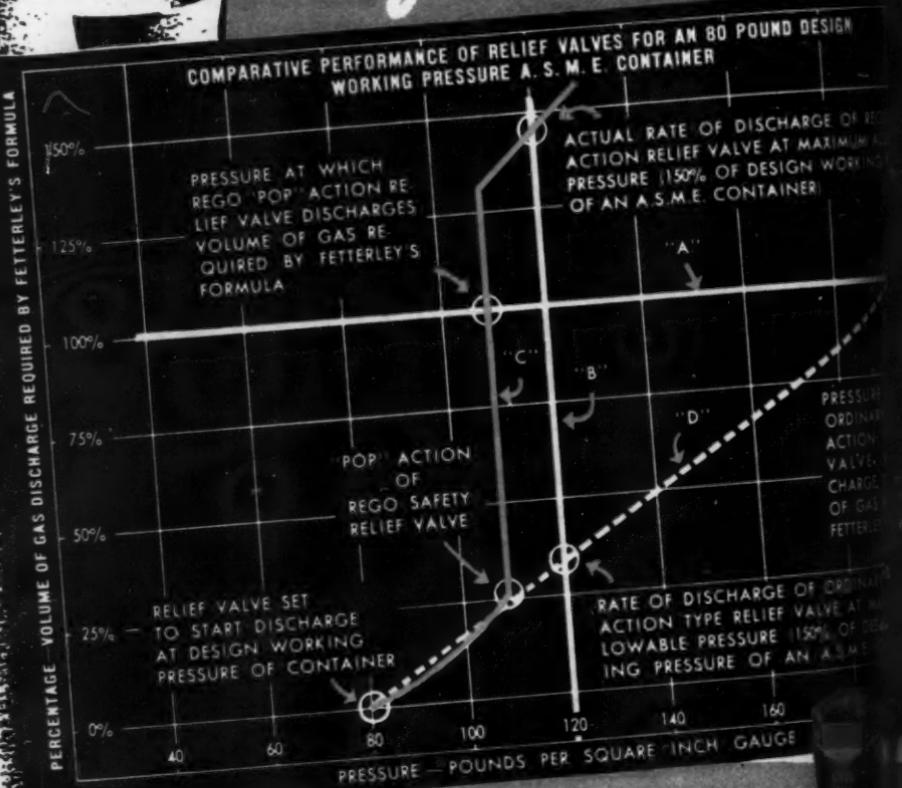
Reliance Regulators are the highest development of control equipment for bottled gas service.

Send for special Bulletin

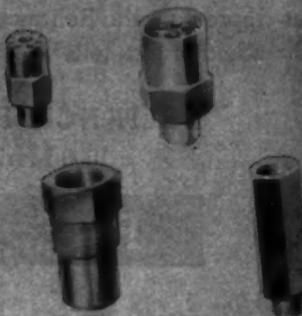
RELIANCE REGULATOR CORPORATION
1000 Meridian Avenue, Alhambra, Calif.

R E L I A N C E

DON'T BUY SUB-STANDARD SAFETY



"A" — Rate of discharge required by Fetterley's formula.
 "B" — Maximum pressure at which relief valve must be wide open.
 "C" — Performance curve of Repo "Pop" Action Safety Relief Valve.
 "D" — Performance curve of ordinary non-"Pop" action type Relief Valves.



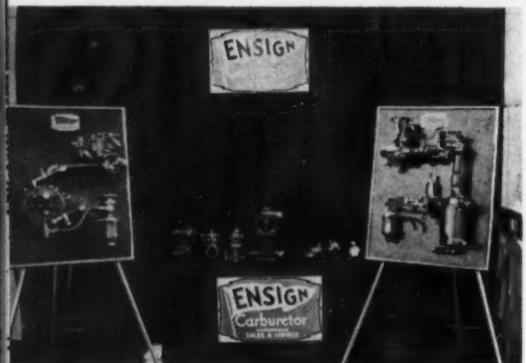
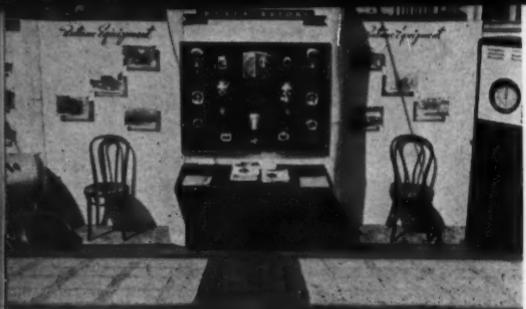
BUY REGO ASSURED PERFORMANCE

The graph describes the performance of a RegO Safety Relief Valve having 0.30 sq. in. free discharge area and with pressure setting suitable for an 80 lb. A.S.M.E. design working-pressure container. This is typical of other sizes and pressure settings of RegO Safety Relief Valves • The N.B.F.U. Regulations and many state codes require that safety relief valves used on containers for storage of liquefied petroleum gases function within certain pressure and capacity limitations • Ordinary non-pop action type relief valves do not provide discharge capacities within the pressure limits required by the regulations • RegO "Pop" Action Safety Relief Valves have a discharge capacity much greater than the regulation requirements, thereby assuring adequate protection • Special resilient seat discs and springs of materials developed after years of research are used in RegO Safety Relief Valves to prevent leakage and seat adhesions.

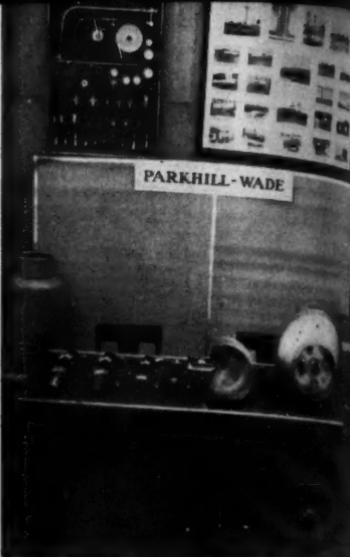
Insure against accident by insisting on
"RegO" trade marked Safety Valves.

The **BASTIAN-BLESSING** Company
258 EAST ONTARIO ST. CHICAGO, ILL.

Pioneers in equipment for using and controlling high pressure gases.



Four of the butane displays at the Los Angeles S.A.E. exhibit.



Butane Was King At S. A. E. Show In Los Angeles

When the Society of Automotive Engineers held its first annual equipment show in Los Angeles, April 13-14, butane was prominent.

Held at the Elks Temple, the two-day show featured tractor and industrial power engineering equipment.

The interest shown by the hundreds of spectators who passed by the booths during the two days and two nights of display well indicated the rapid and decisive entry of butane into the automotive field.

The butane equipment exhibitors at the show were American Liquid Gas Corp., Ensign Carburetor Co., Electric Carburetor Engineering Co., Parkhill-Wade, and Holzapfel Carburetor Sales Co.

"Butane vs. Diesel" will be the subject of discussion for the next meeting of the S.A.E. in Los Angeles on May 10 at the Elks club.

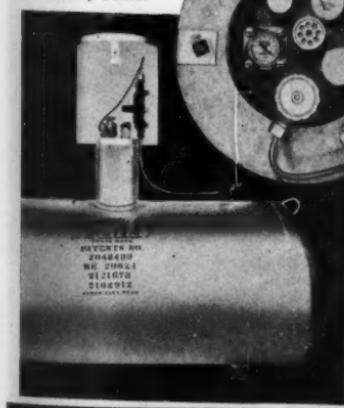
L. P. G. Customers Never Have to Guess about Fuel Contents in Tanks that are Equipped with

Rochester Criterion Gauges are SPECIFICALLY designed for use in liquefied petroleum fuels and incorporate the famous Rochester magnetic principle of operation which assures greater accuracy and leak-proof construction. Guaranteed and backed by twenty-five years' experience gained in manufacturing more than SEVENTEEN MILLION various instruments. Listed as Standard by Underwriters' Laboratories and distributed by manufacturers of L. P. G. Systems.

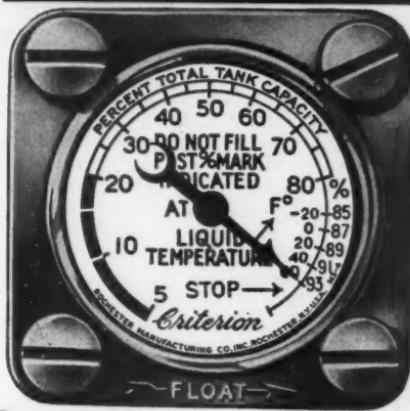
MANUFACTURERS:
Specify Criterion Gauges
on your L. P. G. Systems.

ROCHESTER MFG. CO., INC.
17 Rockwood St., Rochester, N. Y.

(Below) Rochester Criterion Gauge as installed in underground system of the Automatic Gas Equipment Co. of Dallas, Texas.



ROCHESTER *Criterion* GAUGES



- Permanent magnet pointer control—no packing glands.
- No opening through gauge head into tank.
- No fuel waste when in use.
- No keys or wrench required when reading.
- Easy-to-read dial tells ACCURATELY at-a-glance the amount of fuel in the tank in terms of percentage of total capacity.
- Red area on left side of scale warns user when fuel needs replenishing.



AT LEFT: The trailer exhibit, occupying four and one-half acres of ground, presented the latest in outing equipment.

BELOW (left): Ranges, space heaters and LPG bottles give trailer life all the comforts of home.

BELOW (right): A dual bottle hook-up for handy trailer installations.

LPG Goes A-Caravanning

With the coming of spring trailer manufacturers and dealers all over the country are presenting their new equipment to the trailer-minded public of America. Into this rapidly expanding industry, LPG has taken its place as a domestic fuel for cooking and heating.

The rapid acceptance of butane and propane as a practical, economical and handy fuel for use in the modern house-trailer was shown when the Automobile Club of Southern California held its Seventh Annual Outing Show, April 16-21, in Los Angeles.

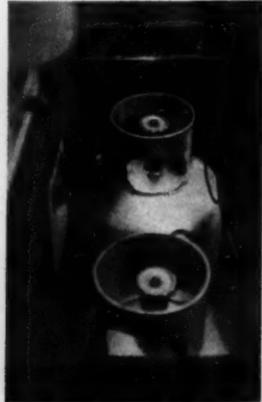
At the Los Angeles show—just one of many that will be held throughout the country during the next two months—LPG equipment was demonstrated by Howard F. Ward, one of the largest

trailer dealers in the country. Mr. Ward has found that the application of stoves and heaters for trailer use is being accepted very readily by his customers.

With the help of the Electric and Carburetor Engineering Co. of Los Angeles, Mr. Ward has developed a small unit consisting of two No. 7 Hackney tanks, equipped with a Fisher regulator and Bastian-Blessing valves. This unit takes up very little room and can be stuck away at the back of the trailer.

For heating purposes a small, modern wall heater, manufactured by the Day and Night Water Heater Co., is available for heating any sized trailer.

Other domestic equipment now being prepared for trailer use are a hot water heater and a small gas refrigerator.



BOTTLE UP SALES IN 1940

WITH

**2 CORKING GOOD
SALES PULLERS**

ROPER
RANGES FOR ALL GASES

Offer These Exclusive Features

"PEASANT-WARE"

BROILER

With Serve Tray



At last, the solution to serving foods piping hot direct from broiler to table. They're served right from this pottery grill with handsome chrome serve tray. Your customers will appreciate the modern conveniences in Roper ranges using bottled gas.

**THE STAGGERED
TOP**

FOR MORE
COOKING
SPACE



The staggered top means the elimination of hot utensil handles. No more burned wrists. No more reaching over

or around utensils. Another exclusive Roper feature available to your customers.

Write today for 1940 Roper Catalog and promotional book.

GEO. D. ROPER

CORPORATION

General Sales Office and Plant: Rockford, Illinois



Kitchen
Contrasts
Of a Single
Generation

The C. S. Merriman Co., dealers in LPG and gas appliances in Fresno, Calif., since 1934, staged an effective demonstration at the Fresno County Fair last Fall when a display booth was divided to show a comparison between kitchens old and new—the modern all-gas kitchen of today and what Grandma, yes, even Mother, put up with a few years ago. Included in the 1940 butane gas kitchen are an Electrolux gas refrigerator and a Day and Night table-top water heater.



LEFT: Ted Bankston, salesman; L. A. Kelly, sales manager, and C. S. Merriman, of C. S. Merriman Co., Fresno, Calif.

MOYNO L. P. G. PUMPS

A Revolutionary New Pump for Butane and Propane



Robbins & Myers has designed the Moyno L.P.G. pump specifically to handle highly volatile liquids . . . safely . . . efficiently . . . economically. One of the simplest pumping mechanisms ever developed. Check these nine "Moyno Exclusives" against any other pump in the world and you will realize why a thorough investigation may mean more profit to you. Send coupon for detailed, descriptive booklet TODAY.



1. NO VALVES.
2. NO VAPOR LOCKING.
3. SELF-PRIMING EVEN WITH HIGHLY VAPOR-DILUTED LIQUIDS.
4. LOW INTERNAL VELOCITIES, WITHOUT TURBULENCE OR CAVITATION.
5. POSITIVE DISPLACEMENT.
6. SMOOTH, UNIFORM FLOW. NO PULSATIONS.
7. UNEXCELLED SUCTION CHARACTERISTICS.
8. COMPACT DESIGN AND LIGHT WEIGHT.
9. SIMPLEST CONSTRUCTION, EASILY INSTALLED AND SERVICED.

ROBBINS & MYERS, Inc.

MOYNO PUMP DIVISION • SPRINGFIELD, OHIO

ROBBINS & MYERS, Inc.

Moyno Pump Division, Dept. D
Springfield, Ohio

Please send details on the R & M Moyno

L. P. G. Pumps. I handle Butane

Propane

Name _____

Address _____

City _____ State _____

Bottled Gas Wonderland

THE importance of bottled gas in homes beyond the gas mains will be graphically brought to the attention of visitors to the newly-designed gas industries' exhibit group at this year's New York World's Fair. It is to be called, "Gas Wonderland."

The "Magic Caves of Ice," one of the striking individual displays of "Gas Wonderland," by means of a series of realistic dioramas, portrays the history of refrigeration beginning with the days of the cave man, and ending with scenes which show the use of Servel Electrolux gas refrigerators in modern kitchens. One of these kitchens is that of an up-to-date farm home, and as visitors stand in front of the diorama a soft voice from a

hidden phonographic record explains that the gas refrigerator seen in the kitchen can be operated with bottled gas.

The 1940 displays will embody new elements of showmanship that will emphasize the marvelous progress which all branches of the gas industry have made in creating appliances and equipment that add to the comfort of the home.

One of these is a series of displays called the "mini-basement" and a "mini-kitchen" so arranged that visitors will get their initial view of them through "peep holes" along the corridor. These "peep holes" will be supplied with lenses that will reduce the size of the rooms in such a way



This realistic diorama set in the walls of the Servel Electrolux "Magic Caves of Ice" exhibit, part of the gas industries' display group at the New York World's Fair, represents in charming fashion a modern farm kitchen with bottled gas as the fuel for cooking and refrigeration.



DON'T
shut your eyes to those



SPACE HEATING PROFITS



- ★ No basement necessary
- ★ Furnace hangs beneath floor
- ★ Register is all you see

WRITE FOR LATEST CATALOG

WARD HEATER CO. • LOS ANGELES, CALIF.

*Get in on the ground floor
with Ward Floor Furnaces*

You are definitely losing money if you don't sell floor furnaces. More and more rural homes are now being heated by WARD'S... all models equipped with 100% Safety Pilot for doubly-dependable service with butane-propane gases. Built on the 31 years' experience of an organization that makes floor furnaces exclusively... and backed by the manufacturer's ten-year guarantee. WARD'S will please your customers and profit your company.



100%
SAFETY
PILOT

FLOOR FURNACE

that the visitor will have the feeling that he is accompanying Gulliver in his travels among the Lilliputians. Visitors will then pass through the actual rooms furnished with gas ranges, refrigerators, water heaters, house-heat-ing and air-conditioning apparatus.

The four conspicuous 90-foot pylons within the "Court of Flame," will be retained from the 1939 Fair. These pylons are colored yellow. At night they will be swathed in gas light. The gas flame torch from the upper corner of the giant mirrored cube will still be a feature of its nighttime lighting. A huge fin-like superstructure above the entrance pavilion bearing the words "Gas Wonderland" will guide visitors to the exhibit.

California R. R. Commission Issues Gas Holder Order

The Railroad Commission of the State of California, by their General Order No. 94, effective April 1, 1940, has established and prescribed a uniform procedure for the design, operation, maintenance and inspection of all gas holders and hydrocarbon vessels operated by public utilities in the state. The order was prepared by the commission's engineers acting in consultation with a committee of the Pacific Coast Gas Association.

All types of holders not already inspected in a manner satisfactory to the commission must be examined by competent outside inspectors, selected by the utility and acceptable to the commission. Additional and similar complete inspections must be made every 20 years on high-pressure liquid hydrocarbon vessels. In addition, daily, weekly, monthly, quarterly and annual inspections must be made.



Oklahoma Hydro-Gas dealers and the towns from which they hail, who recently met at the plant of the Southern Steel Co., San Antonio, Texas: Clarence Chody, Tulsa; Bert W. Wherrick, Thomas; Earl Rhodes, Taloga; Harry Achee, Woodward; Ed Nix, Oklahoma City; Homer Brown, Marlow; Sid Sims, Oklahoma City; W. L. Powell, Engineer of Southern Steel Co.; G. A. Waldeck, Oklahoma City, and in front, M. E. McKay of Southern Steel Co.

State
No.
ashed
for
d in
ocar-
y the
onal-
acific

speci-
minis-
t out-
y and
tional
ust be
are li-
dition,
and an-

ENSIGN



CARBURETION EQUIPMENT

FOR Butane

ACCEPTED STANDARD AMONG
LARGEST OPERATORS FROM COAST TO COAST

Low fuel costs and definite savings in engine maintenance and oil consumption are among the many advantages of Butane for use with tractors and trucks.

ENSIGN Carburetion Equipment gets the most out of Butane and gives engines the extra performance in power and economy so necessary to most efficient operation.

For years, ENSIGN Carburetion Equipment has been the accepted standard among engine builders and largest operators from coast to coast. Insist on ENSIGN—and be sure!

ENSIGN

CARBURETOR COMPANY, LTD.

WINTINGTON PARK, CALIFORNIA • DALLAS, TEXAS • CHICAGO, ILLINOIS

★Write for complete information. Our competent engineering staff is at your service.

Any Fuel Will Do

THE immediate background of the Waukesha Multi-Fuel engine is based upon experience in the Mid-Continent oil fields where the Hesselman spark ignition, oil injection engine was introduced some five or six years ago.

Shortly after its introduction, it was found possible to put a gas carburetor on the air intake of the Hesselman engine, disconnect the injection pump, replace the fuel nozzles with screw plugs, and run it on natural gas. This oil engine thus became a dual-fuel engine.

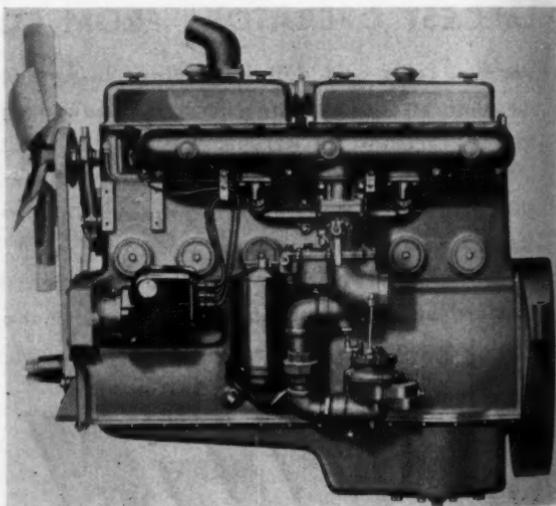
The most obvious next step was to adapt this "dual-fuel" engine to burn gasoline, and this was the beginning of the present Multi-Fuel engine which burns oil, natural gas, butane, or gasoline with equal facility, and can be easily modified to burn a whole host of other fuels such as mixtures of soybean and fuel oil, alcohol,

● P. C. RICHIE, advertising manager of the Waukesha Motor Co., Waukesha, Wis., in a paper, "The Multi-Fuel Engine—A New Internal Combustion Engine That Can Follow the Fuel Trends," presented before the Fuels and Lubricants National Meeting of the Society of Automotive Engineers at Tulsa, Okla., Nov. 2, 1933.
—(Abstract by BUTANE-PROPANE News.)

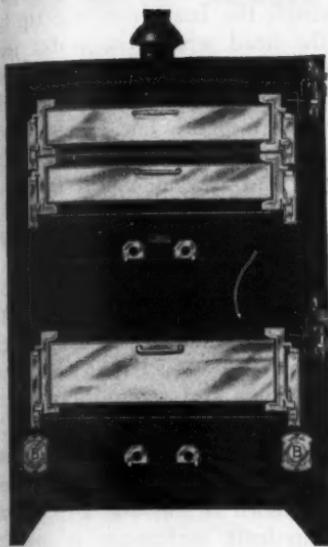
kerosene, tractor distillates, and even low B.t.u. producer gas.

With the facts established—that the Hesselman engine can burn natural gas or butane by the simple removal of the oil burning equipment and the addition of a gas mixing device; or that it can operate on carbureted gasoline with better economy

The Multi-Fuel engine with butane carburetor equipment. Conversion from oil to liquefied petroleum or natural gas or gasoline is merely a matter of applying the proper type of fuel feed accessories.



ARE YOU NEGLECTING



THIS RAPIDLY GROWING FIELD?

More and more butane-propane dealers are entering the commercial cooking field. The promotion and sale of heavy duty appliances brings fast load building results and profitable merchandising sales. In 1939 over 100 Blodgett Baking and Roasting Ovens were sold in every section of the United States for use with butane-propane gases. Don't neglect this rapidly growing field.

Easy To Tell, Easy To Sell Story

Established since 1848, Blodgett Ovens have been standard for nearly 100 years and represent the most complete line of Baking and Roasting Ovens in the world. Write for the Blodgett Easy to Tell, Easy to Sell Story.

THE G. S. BLODGETT COMPANY, INC.

53 Maple St. - Burlington, Vt.

than the conventional L-head engine—it became apparent that this basic oil engine design had all the elements needed for uniform production of either an oil, gas, or gasoline engine in one package and that further development was justified.

Unlike the Diesel engine, the Hesselman engine is a low pressure air throttling engine, and a predetermined air-fuel ratio is maintained throughout its speed and load range. The control is very simple. A piston attached to the fuel volume control rod is opposed by springs within a vacuum cylinder. The springs normally hold the control rod at full volume, but the intake manifold vacuum is impressed on the piston by a line from the manifold to the vacuum cylinder so that as the butterfly in the air intake closes, the piston moves against the springs, and reduces the volume of fuel injected in proportion to the air taken into the engine. Thus, a combustible mixture which can be spark ignited is obtained, and the speed and load control becomes merely a matter of simple hookup to a butterfly throttle valve the same as in a carburetor engine.

The Nozzle Is Different

The Hesselman nozzle is also a departure from the familiar spring loaded nozzle used in the high pressure Diesel engine. It has no moving parts other than the three half ball check valves well back in the body of the nozzle which is surrounded by the water jacket in the head. The tip in the fire zone has only a fixed fuel delivery insert which guides the fuel to the whirler depressions di-

rectly back of the two spray orifices. The tip is surrounded by a copper sleeve with its upper end flanged over to form the seat gasket. This sleeve conducts the heat from the tip back to the head where the water jacket does the rest. The opening pressure of these nozzles is only 600-800 lb. per square inch. The orifices are relatively large—.012 in. in the smallest engine and .029 in. in the largest.

Limited Changes for Conversion

Now suppose this engine were converted to a carburetor engine. You would have exactly the same engine except that the fuel injection system is removed, and screw plugs of the same volume replace the injectors.

The intake side would have even fewer changes than the other. Only the air horn is removed and a standard up-draft carburetor is installed. The spark plugs are also changed but the appearance of the engine is almost the same. The Hesselman plugs are a hot type plug with almost $\frac{1}{2}$ in. of electrode projecting into the combustion chamber because the spark must be within the combustion cup of the piston so that the turbulent stream of oil vapor can be swept across it to come in contact with the spark. The gasoline plug, on the other hand, is a "cool" plug of conventional type. It is also advisable when gasoline is used to provide either automatic or manual spark advance as the oil engine ignition has a fixed advance of only 10° to 15° —while as a carburetor engine a greater range—up to 25° —is generally advantageous.

In regard to cost, it is a fact that

Painters Turn Out Twice the Work with Forster Burners



Illustrated is Twin Operator Paint Burning Outfit B-2. Cylinders of 25 and 55 gallons standard. Also furnished in single operator outfits with 2½- and 5-gallon cylinders as standard. Other sizes on special order.

Painters who use the Forster Paint Burning Outfit here illustrated report that they turn out twice the work with half the fatigue of handling a gasoline torch.

They lose no time refilling, pumping pressure and generating as with gasoline torches, and the burners weigh one-eighth as much as the average quart size torch.

Forster Torches operate on Butane or Propane, cylinder capacities 25 or 55 gallons. Write for our "Torch Catalog" which illustrates this and many other specialized torches.

- ★ We are prepared to design and install industrial butane standby plants, public service gas plants, as well as automotive and stationary engine conversions. Your inquiries are solicited.

RANSOME COMPANY

Manufacturers of Forster Torches and Burners

Distributors of Natural and Liquefied Gas Appliances

4030 HOLLIS STREET

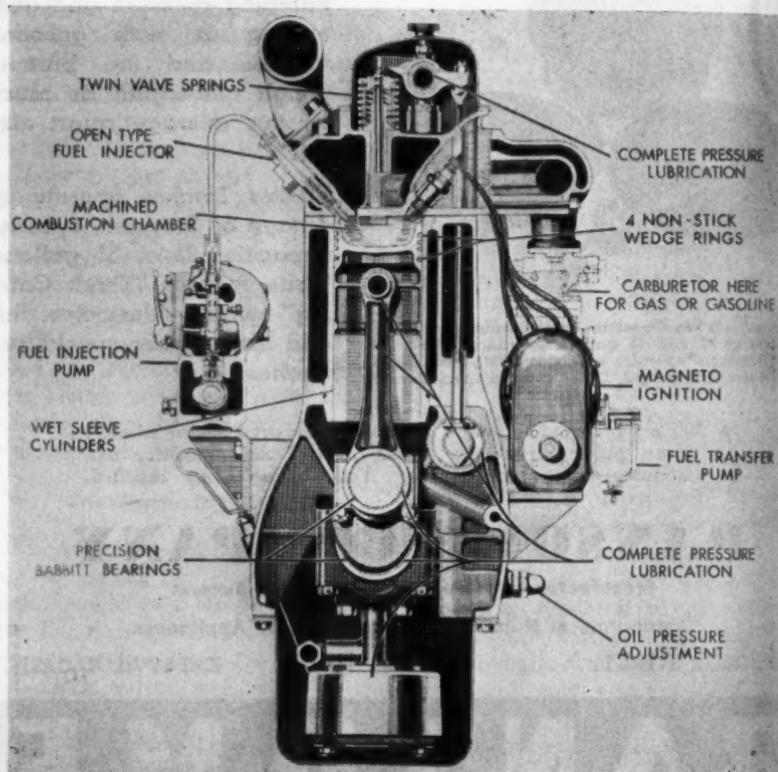
EMERYVILLE, CALIF.

RANSOME

with one standard basic engine for oil, gas, or gasoline, there are introduced the manufacturing economies of straight line production and the oil engine is no longer a deviation from the standard which blocks traffic in the shop, adding to the cost of both gasoline production as well as its own cost. Instead it becomes a part of the major volume, adds to the major volume, and thus reduces costs for the entire output. Understand again

that every major part is the same whether for an oil engine or a gas or gasoline engine. Based solely on the difference in costs of the raw materials by weight, the Diesel rod costs $2\frac{1}{2}$ times the cost of the multi-fuel rod, and weighs 50% more. But the biggest factor from a cost standpoint lies in production economies.

In the matter of weight, in pounds per horsepower, the multi-fuel oil, gas, or gasoline engines are all su-





Mr. Herrman made

\$1275.00 Extra Profits ON ACORN RANGES IN 1939!

*R. W. Herrman, owner
of the Waverlydale Shop,
Davenport, Iowa.*

Five years ago Mr. Herrman started to make bottled gas installations. "It was not, however, till we made connections with the Standard Gas Equipment Corporation that we fully realized the possibilities of our business.

"We have found the best salesman to be a high-grade Acorn range in the home of a satisfied customer. We are very well satisfied with the cooperation we continually get from Standard Gas."



ACORN, ORIOLE AND VULCAN RANGES

The complete 1940 lines stand way out in front, bring you 27 impressive new selling features. The price brackets and margins are just where they need to be to assure volume business at maximum profit.

STANDARD GAS EQUIPMENT CORPORATION

18 East 41st Street, New York
Boston; Philadelphia; Baltimore; Chicago;
Aurora, Ill.; New Orleans; Los Angeles

STANDARD GAS EQUIPMENT CORP., 18 E. 41st ST., NEW YORK

Send me your new 1940 catalog.

NAME _____ COMPANY _____

ADDRESS _____

perior, taken as a whole, to the Diesels, and only slightly heavier than our L-head engines, ranging from 10.2 lbs. per hp. to 13.3 lbs. per hp.

The performance of the two Multi-Fuel engines on both oil and 62 octane gasoline are as follows: The smaller is a 221 cu. in. engine which develops 55 hp. at 2200 r.p.m. with a brake mean effective pressure of nearly 110 lbs. at 800 r.p.m. on oil and slightly better on gasoline.

The 525 cu. in. six-cylinder oil engine at 2100 r.p.m. develops 125 hp. with 110 lbs. BMEP at 1000 r.p.m., and as a carburetor engine on 62 octane gasoline, 135 hp. The maximum BMEP of the gasoline or gas engine is 117 lbs. at 1000 r.p.m., and there is no detonation or roughness.

On the 225 cu. in. engine, the gasoline rate dips below 5/10 of a pound per horsepower hour at 65% load—the average cruising load of most truck engines with full cargo rolling.

It reaches its best economy of 48/100 of a pound at 86% and maintains this rate to practically 95% peak load. On fuel oil, the values are a shade higher with a minimum fuel rate a little less than 5/10 of a pound per horsepower hour.

At the time these tests were made, the six-cylinder engine had a slightly higher fuel rate, but we are confident from the results of the past six months' work with it that as good or even better economy can be obtained.

The basic design of the Multi-Fuel engine, it is believed, has the widest possible flexibility when it comes to meeting the fuel man's developments, either past or present, and probably the future. It has inherent economy in production and can meet every automotive transportation requirement and all of the objections raised by the biggest fleet operators except odor—a criticism of the oil engine, which is an oil industry problem.

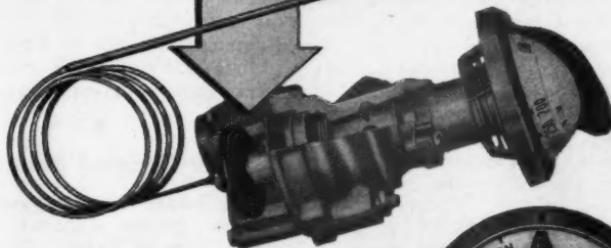
This crowd of banqueters attest the interest shown in the Spring Shellane distributor convention held in Chicago on March 5, when plans and prospects for 1940 sales were discussed.



More than a million in use show that

THE PATENTED **ROBERTSHAW DIASTAT**

is simpler, stronger, surer!



All Robertshaw products enjoy the great advantage of the work carried on constantly at the Robertshaw Research Laboratory, a laboratory devoted exclusively to the development of improved designs and production methods in the field of automatic temperature control.

Robertshaw's stainless steel Diastat—electric-welded, solderless, non-corroding—is a Robertshaw product throughout. Into it has gone the best that forty years of manufacturing experience—plus unequalled research, product development and manufacturing facilities—provide.

ROBERTSHAW THERMOSTAT COMPANY
YOUNGWOOD, PA.

MORE INCOME FROM GAS RANGES. This different sales manual not only shows your salesmen how to increase their earnings but fires them with enthusiasm to go out and do it. Write for a copy.

Ranching with Butane Grows Into Commercial Enterprise

Several years ago a large ranching enterprise in Arizona experimented with butane for fuel in its farming operations. It worked with remarkable success, and in the character of its performance was an indication of its unusual commercial possibilities.

That was the beginning of the Butane Corp., Phoenix, Ariz., for it was Bartlett B. Heard, now controlling owner of the company, who had made the exhaustive tests on his ranch, and accordingly in 1936 he organized a corporation to engage in the liquefied petroleum gas business. That company is today headed by M. S. Jacobus as president and W. T. Joplin as vice president and general manager. Offices are maintained in Heard building in Phoenix. (Dispensing station below.)

Butane Corp. started out with one 3000-gal. storage tank in the spring of 1936. The fuel was trucked in small quantities from the Pacific Coast. Today there is a bulk storage tank of 35,000 gals. capacity, supplied by several tank car shipments every week from the Wilmington, Calif., plant of the Shell Oil Co., Inc.,

and eight service and delivery tank trucks service the entire Salt River valley of Arizona. In addition, they have distributors who cover the entire state, among them the English Butane Co. at Tucson and the English Butane Corp. at Tucson, the Butane Co. at Clarksdale, and Mohave Butane Gas Service at Kingman.

Above-ground butane systems, developed by the corporation, itself, are distributed on a lease basis. They range in size from 60 to 1000-gals. in capacity. While appliances are not sold by Butane Corp. in Phoenix, as they cooperate with all appliance dealers, the English Butane Corp. in Tucson does sell appliances.

The longest distance the company covers in providing service is an 80-mile haul. Representative uses for butane in Arizona include water pumping projects, tractors, trucks, cotton drying, and guest ranches.

◆ ◆

Charter Granted Butane Co.

The Butane Co., of Brownwood, Texas, has been granted a charter to do business in the State of Texas. The capital stock authorized is \$2000, incorporators being Thurman Cole, R. L. Edwards, Paul Delay,



Ira D. Loflin (left) and W. T. Joplin (right) are dispensing a charge of butane to A. M. Yourman, of Calexico, Calif., who is in Phoenix, Ariz., to work the lettuce fields for a month. Mr. Yourman's car is equipped with Ensign carburetion and has a tank capacity of 33 gals. net.

You profit 3 ways if you push Gas Refrigeration!

Servel Electrolux operates on Bottled Gas or Tank Gas

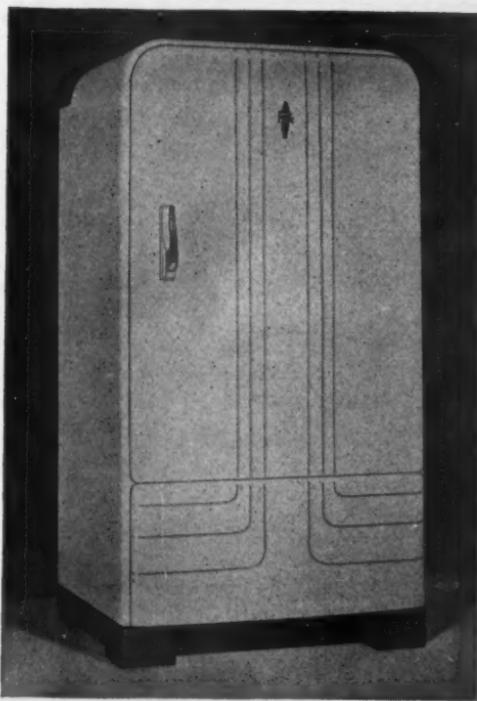
FIRST: You profit directly from the sale of the Servel Electrolux refrigerator.

SECOND: You profit from the added load.

THIRD: You profit by stimulating the sale of other gas appliances.

Servel Electrolux also helps protect you against the inroads of other fuels, for its freezing system with no moving parts offers advantages others can't.

Servel offers you the support of sustained, large-scale national advertising, strong promotion and sales aids to back your local program. Servel, Inc., Evansville, Ind.



GAS REFRIGERATION:

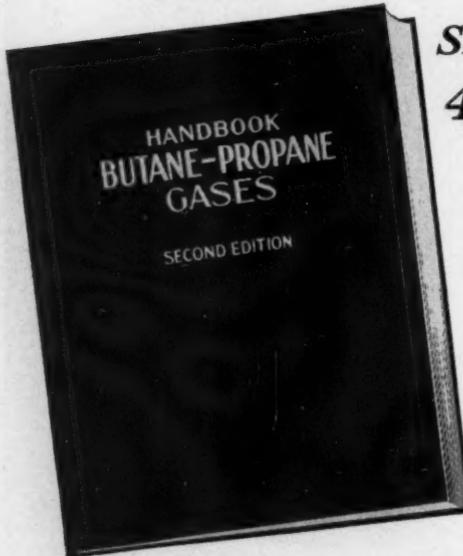
- Publicizes the Modernity of Gas
- Protects Your Present Gas Load
- Stimulates Sales of Other Gas Appliances
- Builds Load without Extra Investment

FREEZES SILENTLY... WITH NO MOVING PARTS

Handbook

BUTANE-PROPANE GASES

Latest Revision
November 1938



SECOND EDITION
415 Pages \$500

Plus Postage

CONTENTS: Semi-Bulk Distribution: Use of Butane in Buses: Combination Propane Operated Utility Plant: Use in Internal Combustion Engines: Design & Installation of Storage: Supply from Petroleum Refineries: Engineering Data on the Lower Olefins: Domestic Appliance Testing and Utilization: Economical Comparisons with Coal, Oil, Electricity, Producer Gas, Manufactured Gas: Town Plants: Manufacture from Natural Gas: Special Uses: Volume Correction Factors: Transportation: Use with Other Gases: Analysis & Testing: Properties of Mixtures: Bottled Gas Distribution: Bibliography: Central Plant Directory: Catalog Section.

We pay the postage on orders accompanied by remittance.

Published by **WESTERN BUSINESS PAPERS, INC.** publishers of

BUTANE-PROPANE News

1709 West 8th Street, Los Angeles, Calif.

Fannin's Hardware and Dealers Serve 3000 Bu-Gas Consumers

Fannin's Hardware, Phoenix, Ariz., dates back in Arizona business history from the present Fannin boys, Paul and Ernest, through their father to 1905 when the father became identified with the vehicle, harness and hardware business. Arizona was taken into statehood in 1912, so the Fannin's business history pre-dates this period.

Fannin's entered the LPG business in 1930, at which time they began to co-operate with the Standard Oil Co. in the sale of "Flamo," bottled gas. They began to handle bulk butane systems in 1935.

In 1938 they signed a contract with the Standard Oil Co. for the distribution of Bu-Gas in the entire state of Arizona. Since this date they have built up a family of Bu-Gas distributors in the state which serve a total of approximately 3000 domestic customers. The domestic services range in capacity from 80-gal. to 2000-gal. systems. (Display room photo below.)

They serve all types of industries, including foundries, cotton gins for sterilization of cotton seed, pumping plants, lighting plants, heavy duty trucks, etc.

The family of Bu-Gas distributors includes Fannin's of Phoenix; Home Gas & Fuel Co., Tucson and Wilcox; Long Fur-

niture Store, Safford; Matlock Electric Supply Co., Globe; Northern Gas and Plumbing Co., Prescott; A. and B. Schuster Co., Holbrook; Arizona Edison Co., Gila Bend; and two other locations under contract. All shipments of butane are made in tank cars direct from the refinery of Standard Oil Co. at Huntington Beach, Calif. The shipments are made direct to the points of distribution.

Fannin's have the state distributorship for the Electrolux refrigerator, Roper ranges, Crown water heaters, Race furnaces, the Coleman Lamp & Stove Co., Thor washing machines, the Tennessee Enamel & Mfg. Co., Quad Stove Co., Wolf ranges and Ensign Carburetor Co. The Phoenix district employs 40 men.



New Crane Catalog Describes Water Heaters for LPG

A new catalog folder describing Crane water heaters designed especially for liquefied petroleum gases has been released recently by Premier Heater Division, La-Porte, Ind. The folder describes models of various sizes and types, gives tables of data and specifications, and is illustrated by diagrams and photographs. Copies of the folder may be obtained from any branch of Crane Co., or from the Premier Heater Division.

Paul Fannin, Ernest Fannin, Hollis Barker (in uniform), and George Abbott. The latter two are about to move into the display line an Electrolux refrigerator.



HOTSTREAM



**will build
your LOAD
as well as
your PROFITS**

• Your biggest load builder is **water heating**. It also provides one of your most profitable appliance lines.

Don't let competing fuels get this attractive business away from you. With Hotstream, you can offer the most

complete line of water heaters specially designed for efficient, economical, safe operation with Butane and Propane gases.

For complete information, prices and catalog, write to Hotstream or, in the South, to these representatives:

L. M. TAYLOR
3200 Main Street
Dallas, Texas

W. G. BAKER
820 Carondelet St.
New Orleans, La.

R. O. FOARD, JR.
205 Walton Bldg.
Atlanta, Georgia



**THE HOTSTREAM
HEATER COMPANY**
8007 Grand Avenue • Cleveland, Ohio

Wildcatting With LPG

By D. H. BINKLEY

The Binkley Company, Oklahoma City.

HERE is now a steady increase in the demand for butane and butane-propane mixtures as fuels for tractors, trucks, heavy duty engines and oil well drilling equipment in Oklahoma.

Most oil drilling engines, especially those which are moved about and



Left to right in their office are C. W. and D. H. Binkley, distributors in Western Oklahoma for Ensign butane-propane carburetors and equipment.

operated in isolated or wildcat territory, are equipped with combination carburetors so that natural gas, gasoline or butane gas may be used, depending upon local conditions and character of available fuel supply.

We install 2-in. to 3½-in. Ensign combination carburetors on larger drilling outfits, which have butane skid tanks from 1400 to 10,000 gal-

capacity. On an average oil well drilling installation in our territory, utilizing a 300-hp. engine, we furnish a fuel supply tank, an Ensign combination carburetor, a filter, two or more large vaporizers, valves and fittings for connecting the fuel, hot water connections to the vaporizers and one low-pressure regulator to reduce the pressure to ounces.

With our combination carburetor the driller can switch from other fuels to butane by simply turning a lock-off valve.

We have found that oil drillers can secure smoother power and step up their operations, under most conditions, to a more rapid pace when using butane as a fuel. Where electric power is used, butane is an ideal fuel for operating the generating equipment.

The smooth steady power of butane also makes it a very popular fuel for operating heavy-duty trucks, tractors, excavators and other equipment used on big construction jobs. The cost of conversion of such equipment for use with LP gases is soon saved through greater fuel economy, extra power and longer motor life.



Boulder Creek, Calif., Butane Business Sold to Al. Noteware

Al. Noteware, for 25 years engaged in business in Brookdale, Calif., handling automobile fuel and supplies, has purchased the butane plant of Otto Barrett at Boulder Creek, Calif., which has been established for several years. Consumers are served in Monterey and Santa Cruz counties, with the heart of the territory lying in the San Lorenzo Valley.

A 4000-gal. storage tank, one of the largest storage capacities in that section, is included in the purchase.

How about your BUTANE-PROPANE Supply?

Your future business is
being built today.

HIGH QUALITY fuel and
DEPENDABLE SERVICE
make well-satisfied cus-
tomers.

**ANCHOR PETROLEUM
COMPANY** specializes
in high-quality butane
and propane.

Our many shipping
points assure you of a
quick, dependable sup-
ply at lower transporta-
tion costs.

Write or wire us for
quotations.

ANCHOR

PETROLEUM COMPANY

Atlas Life Bldg., Tulsa, Okla.

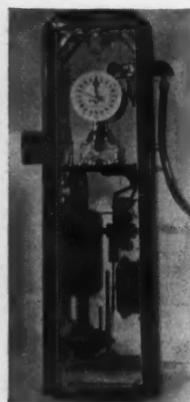
PRODUCTS

Dispenser and Meter

Parkhill-Wade, Los Angeles, Calif.

Model: Butane-Propane Dispenser and Metering Unit.

Description: This unit is the result of



seven years' experience and development by the manufacturer. An outstanding feature is a differential controller which maintains a positive column of liquid through the meter assuring accurate measurement of liquid only. The unit is encased in an attractive display cabinet which has a 100-gal. registering dial on both faces. As shown in the photo, the internal units are compact and easily accessible. The unit is equipped with a "dead man" safety control which automatically shuts down the entire unit in case of accident or carelessness on part of operator. Extra heavy fittings, steel unions, 250-lb. W. P. valves and fittings; explosion-proof switch and shut-off valves are used in the assembly. Unit is furnished complete with Parkhill-Wade dispensing nozzle, 20 ft. of $\frac{3}{4}$ -in. hose. Unit is delivered, complete, ready for connection with either above or below-ground storage.

◆ ◆

House Heater

Pittsburg Water Heater Corp., Pittsburgh, Pa.

Description: In this heating system only

a few pints of water are used, resulting in the quick conversion of gas into available heat. In the average installation this amount of water circulates every three minutes. The heater is equipped with a simply-operated thermostat and a shut-off safety pilot. When the pilot light goes out, the flow of gas is automatically shut off. A blown fuse or power failure stops all flow of gas to the burner.

◆ ◆

Swing Joint

Chiksan Tool Co., Brea, Calif.

Model: No. 60.

Description: The new Chiksan high temperature swing joint is designed for operation at working pressures to 500 lbs. at temperatures up to 700°F. Care has been taken to provide for unobstructed flow through all bends. Increased diameters at elbows assure maximum flow with minimum pressure drop. There are no packing glands or stuffing



boxes to repack; no nuts and bolts to keep tight. Joint does not depend for its rigidity on bolted flanges, threaded parts, locking rings or keys. All pressure or load is transmitted through double rows of hardened steel balls in flame hardened races. Packing chamber is machined to close tolerances and then chromium-plated and polished. Made in six styles for full 360° rotation in one, two and three planes.

alting
into
stalla-
ulates
er is
ther-
When
f gas
fuse
as to

tem-
for
500
Care
inob-
In-
max-
drop.
fling

Relief Valve Manifold

L. C. Roney, Inc., 1740 W. 59th Street,
Los Angeles, Calif.



Description: No. R709, R710 and R711 manifold designed for use with Rego No: 2417 — 2-in. relief valve in 2-, 3- and 4-valve units, respectively. Each relief valve installed in separate chamber with shutoff valves interlocked to permit closing of only

one valve at a time. Each relief valve may be retested or repaired while storage tank is in service. Retesting may be done with air pressure through $\frac{1}{4}$ plugged pipe connection to each chamber. Valve stems packed and provided with cap which may be sealed by inspector.

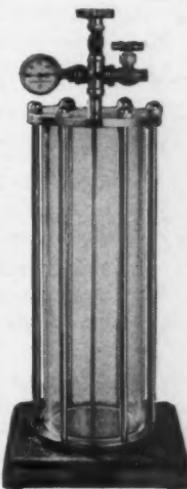


Transparent Container

The Refinery Supply Co., Tulsa, Okla., and Houston, Texas.

Model: Bu-Can-Se.

Description: A visible container for butane and other liquefied gas fuels. Constructed of Lucite, a Du Pont plastic material, giving a transparency which will show the action of liquefied fuel. Container is fitted with inlet and outlet valves and provided with pressure gage. These containers are tested to pressures of 200 lbs. in order to provide ample safety factor for use with butane gas. The action of the fuel can be clearly demonstrated. The apparatus may be used to connect to hot plates and other appliances and completely demonstrates the use of liquefied fuel. By means of pressure gage, it can be demonstrated how the gas pressure is maintained. The apparatus can be easily filled by means of the valves provided on the inlet and outlet. The apparatus may be easily cleaned. Available in one pint and one-half gallon sizes.



Refrigerator Truck

Moellenbrock and Wilke, Washington, Mo.

Model: No. 229.

Description: This hand truck handles refrigerators up to 11 cu. ft. sizes with a minimum weight placed on the operator.





VIKING A New HAND DRIVE PUMP

Viking announces the addition of a new hand drive model to their complete line of Butane-Propane Pumps.

★ ★ ★

It is a back geared unit—available in either 2 or 2½ to 1 gear reduction—built with extra long stuffing box and fitted with special treated gaskets and packing—ports are horizontal.

★ ★ ★

For complete specifications, write for Bulletin 2301-40. It gives full details on all Viking Rotary Pumps for Butane-Propane service.

VIKING PUMP COMPANY
CEDAR FALLS, IOWA



Attending the first board meeting of the newly formed Oklahoma Liquefied Petroleum Gas Association shown from right to left are (seated), C. J. Nicklas, president; J. L. Grigsby, vice president and Francis Borelli, secretary-treasurer. Standing, two of the eight directors, Paul C. Tooks and Sidney G. Sims.

Oklahoma LPG Dealers Form State Wide Association

The Oklahoma Liquefied Petroleum Gas Association was organized at a meeting on March 9 in the offices of Oklahoma Butane Gas Co., 515 South Robinson Ave., Oklahoma City. Twenty-two firms representing the industry attended.

The organization is on a statewide basis. Officers elected were: C. J. Nicklas, Oklahoma Butane Gas Co., Oklahoma City, president. J. L. Grigsby, American Butane Gas Co., Oklahoma City, vice president; Francis Borelli, Borelli Hardware Co., Okarche, secretary-treasurer. Directors are Paul C. Tooks, Sidney G. Sims and C. Ralph Jones, all of Oklahoma City; J. Edwin Payne, Frederick; R. L. Epple, Tecumseh; W. C. Davis, Enid; Jap Surrell, Atoka; and W. W. Morrison, Jr., Geary.

The directors met at the Biltmore Hotel, Oklahoma City, April 9 to perfect plans for the organization. The first State convention, held April 16, voted to extend associate memberships to all branches of the industry. Only dealers and distributors were originally included.

Gulf Oil Corporation Gives Service Awards to Workers

Ten thousand men and women who have completed from 10 to 38 years or more of service with the Gulf companies were extended congratulations last month in Pittsburgh by Col. J. Frank Drake, president, on behalf of W. L. Mellon, chairman, and the board of directors of the Gulf Oil Corp.

These veteran Gulf employees received service awards from the corporation at district gatherings held in the various sections of the United States. The awards consisted of a solid gold pin, set with precious stones, each diamond signifying 10 years service and each ruby five additional years and a service award certificate printed on fine parchment.

Praising the progressive companies in American business and industry who have recognized the need not only to give jobs, but steadier and more permanent jobs, Col. Drake declared:

"They know that this kind of employment security is of priceless value to the worker, to his family and to the company of which he is a part.

"Forty per cent of the entire Gulf organization has been continuously employed for 10 years or more—through one of the most difficult and uncertain decades in business history. Of the 10,000, approximately 2250 have been with the company for more than 20 years and more than 600 have been steadily employed more than 25 years.



Bastian-Morley Appoints L. T. Tegler Sales Engineer

Announcement has been made by Bastian-Morley Co., Inc., LaPorte, Ind., of the promotion of L. T. Tegler to sales engineer. Prior to this transfer, into the company's sales division, Mr. Tegler had been, since August 1938, a winter air conditioning engineer on the company's engineering staff.

Mr. Tegler also served as a member of the engineering department of both the Kelvinator Co., Detroit, Michigan and Chrysler Airtemp Corp., Dayton, Ohio.

\$10,000 NEW SALES IN ONE YEAR!

If you have any doubt about the profit in selling Bryant heating equipment for L. P. G. in YOUR town, here's a case which should convince you.

One dealer in a Missouri town of 5,676 population sold \$10,000 worth of Bryant heating installations during the past twelve months. He makes a profit not only on the heaters, but on the gas required to run them. Figure it out for yourself.

And—to get the details on how you can do the same thing, or better, write us.

THE BRYANT HEATER COMPANY

17825 ST. CLAIR AVENUE
CLEVELAND OHIO



PROFIT BUILT FOR YOUR MARKET



"SEALED HEAT" RANGES

Sell the range that brings you year-in and year-out greater and more substantial profits. Sell the range that has the GREATEST appeal to housewives. Sell Anderson Ranges—the world's finest cooking machines—that cook with "Sealed Heat" and seal in the rich, natural, savory food juices and retain all the health-giving vitamins. Housewives everywhere are saving kitchen hours, cutting food costs and preparing better meals with far greater ease with the Anderson—the range that cooks with the gas turned off.

Models are available in ivory and white in a wide range of prices, approved by the A.G.A. for use with LP gases. WRITE TODAY for facts about increasing your profits with Anderson.

ANDERSON STOVE CO., INC.

Factory & General Offices, ANDERSON, IND.

Anderson Stove Co., Inc., Anderson, Indiana - 2
Gentlemen: Tell us all about increasing profits with Anderson "Sealed Heat" Gas Ranges.

Name.....

Address.....

City..... State.....

Nebraska Wholesale Cooperative Serves 300 Associations

The Farmers Union State Exchange located at 39 and Leavenworth streets, Omaha, Neb., is a cooperative wholesale serving over 300 cooperative associations in Nebraska and for 26 years has carried on business with Nebraska farmers.

The Exchange entered the butane-propane gas business in June, 1939, under the supervision of Ben H. Long. It began cautiously, advancing step by step, using equipment and appliances of national reputation for which a fair and reasonable price, based on quality, could be maintained. Conservative selling, careful service and satisfied patrons have been their aim in the initial program, according to C. W. Williams, director of sales. Frank Allen supervises installations.

With the return of normal crops in Nebraska, it is expected that thousands of farmers will welcome butane gas as a happy medium for bringing city comfort and economy to the farm. There are now 60 units in operation, including gas ranges, hot water heaters, room heaters, furnaces and lights, in homes and business places.

The past winter has been severe in Nebraska, and has tested installations to the limit, states Mr. Williamson. Nevertheless, service calls have been made without delay. Supply tanks are located well below the frost line to maintain adequate pressure in sub-zero weather.

At present butane is transported to Nebraska by truck from the Kansas fields. As installations increase, storage for rail shipment will be provided at Omaha.



Spofford Gas Co. Opens Office in Crowley, La.

W. A. Spofford, Jr., Crowley, La., has opened an office and service shop in Crowley for handling liquefied petroleum gas and gas appliances. He is located at 416 Parkerson Ave.

Sales will be in charge of W. Ringue, formerly of Eunice, La., and the first campaign will be featured by a drive to sell gas refrigerators for the coming summer.

E. R. Guyer, Cribben & Sexton Vice President, Passes Away

Edward R. Guyer, first vice president of Cribben & Sexton Co., Chicago, Ill., manufacturers of gas ranges, and immediate



E. R. GUYER

Co., and finally with Cribben & Sexton Co.

Mr. Guyer was president of the Association of Gas Appliance and Equipment Manufacturers during 1938-39 and was also past president of the Manufacturers Protective and Development Association.



Permanent Committees Will Function for Eastern Section

William L. Hauck, chairman of the Eastern Section of the Liquefied Petroleum Gas Association, has just completed the rosters of his various committees that will carry on the work of the Section for the fiscal year 1940-41.

Prior to Mr. Hauck's chairmanship the work of the Eastern Section was conducted by temporary committees and this is the first time in which standing committees have been appointed with a full year's activity under their jurisdiction. The committees will cover the activities of safety, ways and means, membership publicity, new business, Fall program, industrial publicity, membership, and statistics.

In addition to the above there will be one committee appointed later in the season which will undertake the arrangements and the program for the 1941 annual meeting to be held next fall.

The L.P.G. Pump You Have Been Waiting For! Smith's Balanced Rotary



Designed and built for L.P.G. service, this radically different pump is the answer to the pumping problems facing the butane-propane industry today. It will do your L.P.G. pumping with speed, efficiency and economy.

SMITH PUMPS ELIMINATE

- Packing Box Gas Leaks
- Inadequate Differential Pressures
- Loss of Efficiency
- Frozen Packing Boxes
- Wear by Balancing Pressure

FOR ALL SERVICES

Bulk Plants, Dispensing, Bottle Filling,
Tank Trucks, Etc.

Capacities up to 135 GPM
Differential Pressures up to 200 lbs.
Built for 250-lb. working pressure

Write for complete bulletin.

1135 MISSION, SOUTH PASADENA, CALIF.

SMITH
Precision Products
COMPANY

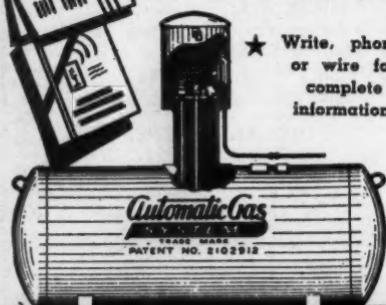
YOU CAN
AUTOMATICALLY
MAKE MORE MONEY
WITH
Automatic

Automatic and Eveready Gas Systems have patented features and are expertly engineered. A.S.M.E. Code built . . . approved by Underwriters' Laboratories . . . quality built through and through.

Automatic and Eveready Gas Systems give you a complete line enabling you to get a more profitable volume.

Nationally known, nationally advertised, nationally accepted! Backed by planned "dealer help" advertising and sales promotion.

★ Write, phone or wire for complete information!



Automatic
Gas Equipment Co.
2216-18 COMMERCE ST.
DALLAS, TEXAS

Tucson Bu-Gas Distributor
Host to Appliance Dealers

Gas appliance dealers, real estate men and architects of Tucson, Ariz., attended a March meeting held by the Home Gas & Fuel Co., of Tucson. The purpose was to outline a 1940 dealer profit plan for the sale of Bu-gas, a Standard Oil product, which has been distributed by the host company for nearly two years. James Hardie acted as toastmaster.

Ernest Fannin, of Phoenix, Ariz., state distributor, discussed the development of liquefied petroleum gas sales, and E. J. Ryan, sales representative, described how the Home Gas & Fuel Co. has secured more than 600 outlets for the gas since taking over the territory, and how real estate men and architects have cooperated in this result.

The company has a 15,000-gal. bulk storage tank in Tucson and additional storage at Willcox, Ariz. A new 2000-gal. delivery tank truck has just been received to supplement the 1000-gal. truck and several smaller ones for servicing customers in the counties of Pima, Santa Cruz and Cochise, which constitute the present territory.

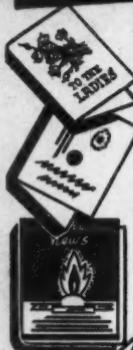


Dickson Butane Equipment Corp.
Puts Out New Butane Carburetor

Entering the automotive butane field with a new carburetor, the Dickson Butane Equipment Corp., located at San Mateo, Calif., announces that their unit is now ready for immediate installation.

According to R. L. Dickson, president of the concern, the carburetor has been developed on an entirely new principle from units previously placed on the market. He states that it is just the reverse of the conventional butane carburetor, with the butane being sprayed over the tubes in which the heat is concentrated by means of water.

Connected with Mr. Dickson in the development and sale of the new butane carburetor is A. T. Smith, Sr., president of the Pacific Truck Service. Mr. Dickson is manager of the butane division of this same concern in northern California.





New 3000-gal. transport tank truck of Blythe (Calif.) Gas Co.

Transport Truck Guarantees Large Storage for Blythe Gas

Due to increased load developed during the winter season just closed, the Blythe Gas Co., Blythe, Calif., has supplemented its storage and transportation facilities by the addition of a 3000 gal. welded steel transport tank on a semi-trailer drawn by a Model 704K White tractor.

The unit was designed by Parkhill-Wade of Los Angeles, and went into operation in March. The tractor operates on butane and Ensign carburetor equipment is used. (See photo on this page.)

The Blythe town plant has 12,000 gals. storage capacity and has been taking tank car deliveries of 10,000 gals. This involves a decline in the contents of the tanks to 2000 gals. or less, before a new supply can be received. Cold weather, a sudden demand for bulk gas during the load peak, or a shipping delay, makes a larger reserve storage desirable. As insurance against such a contingency, smaller and more frequent deliveries make it possible to maintain at least 9000 gals. in the storage tanks at all times, plus the contents of the truck tank. (Photo of new truck above.)

A growing demand for butane motor fuel for farm and highway purposes also made increased storage and dispensing facilities necessary. Trucks and farm equipment are now being served and additional storage and equipment will be added as needed.

Established in 1937, the Blythe gas plant has steadily increased its numbers of consumers to more than 200 under the direction of L. R. Lackey and the management of K. C. Jones.

KEEP FAITH WITH YOUR CUSTOMERS

Your customers depend upon you for uniform, high-quality fuels. Keep faith by giving them the very best—Philgas Propane or Butane! With Philgas supplying your needs you are sure of a uniform, high-quality product at all times.

But high quality is not the only advantage you gain by dealing with Philgas! Prompt deliveries are assured by adequate manufacturing, storage and transportation facilities; and the services of competent Philgas engineers are available to you when needed.

Investigate the many "plus" advantages of Philgas today! It will be well worth your while—and there will be no obligation.

Philgas
DEPARTMENT

PHILLIPS PETROLEUM COMPANY
GENERAL MOTORS BUILDING
DETROIT, MICHIGAN

NEW YORK

MILWAUKEE

PHILADELPHIA

ST. LOUIS

CHICAGO

AMARILLO

BARTLESVILLE, OKLA.

THE NATION'S LARGEST MARKETER
OF LIQUEFIED PETROLEUM GASES

RESEARCH

- **BUTANE-PROPANE News** wishes to keep its readers informed regarding technical and practical advances concerning research, manufacture, development, and transportation in the liquefied petroleum gas field. In this column will be found a resume of recently published articles, papers, bulletins and books dealing with the industry's various phases.

Human-Relations Manual for Executives—By Carl Heyel. Presents hundreds of ideas for selecting, developing, stimulating, safeguarding and guiding the working force, in the form of case examples of what actual companies are successfully doing in this field. Chosen according to their suitability for use by other companies and industries. "Application checking points" in the form of questions are listed at the end of every chapter to direct the thinking of the reader to his own situation, and are particularly valuable. A practical workbook for executives, foremen and all concerned with personnel problems. Published by McGraw-Hill Book Co., 330 W. 42nd St., New York City; 253 pages; cloth; price \$2.

C. F. R. to Develop New Gasoline Road Test Method in 1940—M. G. Van Voorhis. *National Petroleum News*, Feb. 7, 1940, pp. R-34, 35. The major project of the Motor Fuels Division of the Co-operative Fuel Research committee for 1940 will be to bring the road test procedure for determining knocking characteristics of motor fuel up to date. With the development of a new standard road test method, the C.F.R. committee will then recognize three methods of test. Papers presented at the annual S.A.E. meeting, indicate how much variation in engine performance may be caused by vari-

ous factors in fuel composition and engine adjustment. In articles in this issue are given significant portions of reports on the effects of important variables in fuels and engines on detonation; some of the differences between anti-knock tendencies of various hydrocarbons and motor fuels; the differences in detonation between cylinders of the same engine for the same fuel; an engine increases its detonation tendency with mileage with the same spark setting and requires spark adjustment to maintain a constant octane number requirement; a means of correlating the Research method of determining octane number to road octane number by using the laboratory method on the fuel having its heaviest fraction removed; and the variation in air-fuel ratios between individual cylinders and between cylinders and carburetor.

The Compressibility of Gases—G. G. Brown and D. E. Holcomb. *Petroleum Engineer*, Feb. 1940, pp. 23-26. Part 2. Gaseous Mixtures. Part 1 in January issue, p. 21.

Calculating Gasoline Octane Rating from Gravity and ASTM Distillation—R. B. Cox. *Refiner*, Feb. 1940, pp. 43-48. This paper presents methods of calculating the octane rating of any gasoline by using only its A.P.I. gravity and ASTM distillation. Six charts for this purpose are shown in this article, as are tables showing correlation of actual octane number of various samples with calculated octane number.

The General Utility of the Kremser Factor. A Ten-Year Development—Randall Maass, General Petroleum Corporation. *California Oil World*, 2nd Feb. 1940, pp. 15, etc. Part 1. Just ten years ago this month Mr. Kremser of the Standard Oil Company presented a paper before the California Natural Gasoline Association entitled "Theoretical Analysis, the Key to Absorption Plant Design." In this paper, still considered the most important ever presented before the association, Mr. Kremser introduced the new ab-

sorption factor concept and illustrated its use in the control and design of absorption towers. This paper discusses the general use of the absorption factor and reviews its extended applications. Although Mr. Kremer restricted his discussion to gas absorbers, other investigators have extended the use of the absorption factor to such an extent that the original title has been justified. Today it can be said that "theoretical analysis is the key to absorption plant design," using the term "absorption plant" in its broadcast form to include the stabilizing unit.

Deviation of Natural Gas at High Pressures. Useful Charts on Gas Behavior—J. W. Smith. California Oil World, 1st Feb. 1940, pp. 12-15. Correlation of the deviation of pure hydrocarbons with the critical point; Correlation of the deviation of mixtures with the pseudo-critical point; The deviation of an actual gas; Effect of condensation; Accuracy of the pseudo-critical method; Partial volume method.

Modified Composition Analysis Application to Absorption Plant Control
 — H. P. Saueressig. California Oil World, 1st Feb., 1940, pp. 16-19. In a previous article presented before the California Natural Gasoline Assn., F. N. Laird of the Texas Co., described a portable, practically all-metal apparatus designed for the rapid low temperature analysis of light hydrocarbon gases, liquids and vapors. The purpose of this paper is to present results obtained by application of the device over a two-year period to analyses of a wide variety of gases, liquids and vapors in connection with absorption plant control.

Temperature Bituminous Coal Tar
—C. S. Kuhn, Jr. *Industrial and Engineering Chemistry, Anal. Ed.*, Feb. 15, 1940, pp. 86-89. The use of selective solvent action in the separation of complex mixtures has assumed considerable technical importance in recent years. A study has been made of the liquid phases formed by the action of liquid propane on the

pentane-soluble fraction of a high-temperature bituminous coal tar. As the ratio of propane to tar is increased there is an increase in average density, refractive index, and molecular weight, and a decrease in hydrogen-carbon ratio of the extract, and corresponding changes in the residue. The separation is largely on the basis of molecular weight, but at high tar-propane ratios there is some evidence that alkylated cyclic structures have been preferentially extracted. In general, there is a tendency for oxygen, nitrogen and sulfur compounds to concentrate in the residue.

High-Temperature Cooling of Internal-Combustion Engines—Petroleum Engineer, Feb. 1940, pp. 83, 85. Within the last two years industrial interest in the development of motive power by the use of internal combustion engines fueled with regular metered city gas has grown so rapidly that recent reports made by the Gas Engine Power Committee, Industrial Gas Section, American Gas Association, concerning better methods of waste heat utilization in connection with gas engine applications will be of profit-producing concern to power-using industries. The improved procedures involve what is known as "high-temperature cooling" of internal combustion engines, and are based upon the use of jacket cooling water at temperatures greater than 212°F. Also in Gas Age, Feb. 15, 1940, p. 13; Oil and Gas Journal, Feb. 29, 1940, p. 57.

Fuel-Flue Gases—Advisory Committee, Technical Section, American Gas Association. To A. G. A. members, \$2.50; to non-members, \$5.00. The purpose of this book is to bridge the gap between the work of the chemist engaged in analytical investigation and that of the engineer and sales forces who are looking for the application and interpretation of the chemist's findings. It should be useful in referring to the basic laws of behavior of gases which are covered in the introduction, or it should be of help in interpreting the complex composition of natural, mixed, and manufactured gases.

WARREN-GAS
Specialized
BUTANE

"More Dependable Than Sunlight"

A reliable source
of supply

For Domestic, Industrial and
Drilling Purposes

Butane available from plants
located in

TEXAS KANSAS OKLAHOMA
NEW MEXICO ARKANSAS

Inquiries Solicited

**WARREN PETROLEUM
CORPORATION**
TULSA, OKLA., U.S.A.

*The Line of
Least
Resistance!*

PUNCH UP your Appliance Sales! Cash
in on Pacific's amazing fuel economy
... scientific design ... highest pos-
sible efficiency rating ... more heat
with less fuel. Write for catalog today
... Dept. BN-5.

PACIFIC GAS RADIATOR CO.

Main Office and Factory
Huntington Park, California

26 SUCCESSFUL YEARS



The Whys of the Safety Code

MOST of those engaged in the LPG industry are familiar with the National Board of Fire Underwriters Regulations as outlined in Pamphlet No. 58 (July 15, 1939) but many might be interested in the reasoning used in promulgating these regulations. On the surface some parts appear to be mandatory and unnecessary, and in cases appear to impose difficult restrictions on operations. The orders are not perfect, but are the best that have been worked out for the general good of the industry.

BUTANE-PROPANE News is going to publish from time to time explanations of the various parts of the regulations in a question-and-answer form to help explain the reasons why each paragraph has been included, beginning on page 1 and going through the book. Our staff is willing to further help any subscriber by answering any specific questions that might arise as to the interpretation of the regulations or to explain them in further detail.

Division 1

Why were the Regulations written?

The NBFU Regulations are a guide to the industry and indicate minimum requirements of safety and good practice for the industry. They also are designed to serve as a guide to state and municipal regulatory bodies as a model code to follow. Adoption of these orders tends to stabilize the in-

industry and provide workable ordinances with safety.

By whom are they written?

The latest edition is the result of work by representatives of all branches of the industry and from all geographical locations in conjunction with the National Board of Fire Underwriters and the Liquefied Petroleum Gas Association, who met together in local sections and later in a central location where they endeavored to promulgate a workable and safe code of minimum requirements.

Who should have and who should read this pamphlet?

Every owner, operator and employee in the industry should have a copy of the regulations and know them thoroughly. Employers should make copies available to all employees and be certain that they are understood. Commercial users should follow the same course.

1—Application of Rules

(a) Why are certain types of plants not taken in under these regulations?

The type of plants enumerated usually are designed and built according to practices more inclusive than these regulations, and furthermore they are under the operation of trained personnel. Plant processes are such that these regulations are not applicable.

Why are ICC containers not covered?

Special regulations in force before the writing of Pamphlet 58 cover the use and handling of ICC containers. There were many thousands of these cylinders operated before the use of LPG became general, and the control

**"THE MOST
PERFECT PUMP
for BUTANE
USE"**

This unsolicited comment comes from a prominent oil concern* who goes on to say:

"The Granco pump is smooth and does not throw any surge of liquid against the meter which would cause it to spin and make errors in readings."

The smooth positive squeezing action of the Granco pump reduces turbulence in the liquid stream. There are other reasons, too, why Granco pumps are first choice with many leaders in the LPG field. Get the complete story on Granco pumps before you choose equipment for your next installation. Write for illustrated folder and complete information today.

*Name on request.



FOR EXTRA GOOD PUMPING EQUIPMENT
Granco

GRANBERG EQUIPMENT, INC.

1308 - 67th Street
Oakland, Calif.

STOCKS AND SERVICE IN PRINCIPAL CITIES

*For Safety
and Economy*

ETHYL MERCAPTAN

Purified

The ACCEPTED
standard
odorant
for liquefied
petroleum
gases.



MALLINCKRODT
CHEMICAL WORKS

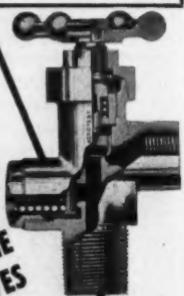
ST. LOUIS

NEW YORK

SAFE!
UNDER ALL
PRESSURES

KEROTEST

PROPANE-BUTANE
CYLINDER VALVES



Propane-Butane Cylinder Valves
combine the famous Kerotest Diaphragm Packless design, with an
automatic spring relief safety device which releases excess pressure
safely only. Write for descriptive
catalog No. 1-LP.

KEROTEST MANUFACTURING
COMPANY
PITTSBURGH, PA.

of maintenance and filling was under large, responsible operators. The rules in effect are satisfactory for this type of service, but are not general enough to cover the expanded uses of LPG in the industry.

(b) Why are special orders applicable to city distribution systems?

Many building ordinances in large and small cities incorporate the NFBU Regulations for the "Installation of Piping and Fittings for City Gas." To prevent conflict with these ordinances this part of the LPG business should operate under that regulation which goes into much more detail on house piping and appliance installation. Reference to it by butane distributors will afford many suggestions for good practice in house installations.

(c) Why should plans and specifications of industrial installations be submitted to inspection departments?

Usually industrial installations involve comparatively large installations. If located in corporate cities or towns, it is usually necessary to obtain building permits and fire department permits before installing any facilities for handling or storing of inflammable liquids. Zoning ordinances often prevail. The submission of properly prepared plans and specifications before starting work will reduce the difficulties of approval and may save the installer much trouble and expense in changes that might be forced on him.

2—Odorizing Gases

Why is it necessary to include a paragraph on odorizing gases?

The public from long usage is fa-

miliar with the characteristic odor of manufactured gas. When natural gas took the place of manufactured gas in many cities, it was found by experience that the public had depended on the odor of gas to detect leaks and the use of unodorized natural gas increased the number of accidents due to gas. The natural gas companies adopted odorizing methods with odorants giving a smell of approximately the same character and intensity of manufactured gas.

When the use of LPG began to increase rapidly, many manufacturers not having means to odorize the product, started to sell unodorized material to distributors and dealers. To prevent the troubles encountered by the utilities, odorization is made mandatory.

In cases where LPG is used for solvents or in processing when the use of an odorant is impossible, special exemption should be obtained from the regulatory bodies enforcing the regulations.

3—Examination and Listing of Equipment and Systems

Of what benefit is this to the industry?

The LPG industry is growing fast and many newcomers are in the field each year. Some of these people have had experience in handling inflammable materials, and others have not. It is not the intent of the regulations to stifle originality of advance in the design and manufacture of utilization equipment, but it does intend to try to control the use of obviously unfitted and poorly designed equipment that is unsafe.

It will take time to get approval of



Regulators for Single and Two Drum Systems

Contains illustrations, descriptions and performance data on all types of Fisher Regulators and Accessories for single and two drum systems—including automatic change-over assemblies. You will want this Regulator information by Fisher—pioneer and leader in the development and manufacture of regulation equipment for the liquefied petroleum gas industry. Simply fill in the coupon below and mail it today! Your FREE copy of this helpful Catalog will be sent promptly.

FILL IN . . . TEAR OUT . . . MAIL TODAY!

—
FISHER GOVERNOR CO., Dept. 912,
Marshalltown, Iowa

Gentlemen: Without obligation, please send
your new FREE Catalog 42-D.

Name.....

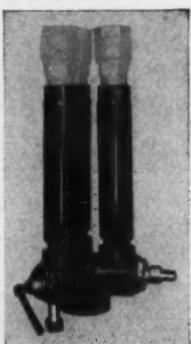
Address.....

City..... State.....

Firm Name.....

RONEY

RELIEF VALVE MANIFOLD
FOR LARGE STORAGE TANKS



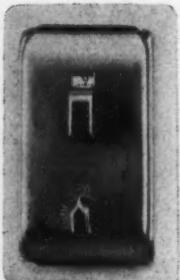
Provides full spring loaded relief areas with ability to re-test or repair relief valves while tank is in service.

Interlocking construction permits closing of only one valve at a time.

Available in 2, 3 or 4 valve units.

L.C. RONEY INC.
1740-44 W. 59th ST. - LOS ANGELES, CALIF.

GENERAL CONTROLS *Announces*



A
NEW
TIMER.
THERMOSTAT
FOR ALL
B-60 SERIES
GAS CONTROLS

YOU SIMPLY SET THE TIMER

GENERAL CONTROLS TURNS ON THE HEAT
Full details and specifications for these beautiful
all-gas electric thermostats are in our new 1940
Catalog. Write today for your free copy.

GENERAL CONTROLS

267 5th Avenue
New York City



450 E. Ohio St.,
Chicago, Ill.

all equipment but it is hoped that some time in the future all equipment going into the utilization of LPG will bear the stamp of approval of an accredited agency and that this approval will enable the buyer and retailer to differentiate between the good and the bad. A perfect example of the benefits of such listing and testing is the results obtained by the A.G.A. for the natural and manufactured gas industry. The cooperative work of this group has helped to standardize and improve the quality of the merchandise used by the gas industry with common benefit to the manufacturer, gas companies, distributors and the public.

4—Design, Working Pressure and Classification of Storage Containers

How was this table on storage containers obtained, and why?

The storage of high vapor pressure products in tanks not designed for them is a dangerous practice. To the layman a LPG tank is a LPG tank. He has no technical knowledge of the difference between propane and butane, and if some control is not held over the distribution of these products into containers suitable for them, possible failures might occur. It would be unfair to the industry to force the makers of tanks to build them all for use with propane as many never will be called upon for this service.

However, some standards must be set up if the use of other tanks is to be allowed.

Under the first column, "Container Type," ranging from 80 lbs. to 200 lbs., are six divisions. These represent standard pressure specifications

for tanks to handle the blends of LPG as represented in the second column and designated by their respective vapor pressures at 100° F. There are sufficient divisions to take care of the customary commercial blends.

The second column designates the maximum vapor pressure in lbs. per sq. in. gage at 100° F. of the products allowed to be stored in these tanks.

The minimum design pressure in columns three and four provides for construction of tanks under either the API-ASME Code or the ASME Code. The weight of the tanks, shell and head thickness will be the same whether figured by one code or the other, as the pressure allowed compensates for the difference in the factor of safety.

The reason that either code is used as a basis for design is that the API-ASME Code was developed by the oil industry and almost all construction of pressure vessels for the industry is governed by this code. In many states where oil production and refining are not common industries, this code is not widely known. In these locations the ASME Code is known and accepted. There is a possibility that at some future date these two codes will be consolidated, taking the best features of each. The adaptations of the two codes in these regulations allows for the use of either where they are recognized. Care should be taken in determining the code applicable, depending upon the state or locality to which the tank is to be delivered as some inspection authorities will not recognize the API-ASME label because their ordinances have no provision for so doing.

(To Be Continued)

The Hiawatha

2-OVEN COMBINATION RANGE
ANOTHER REASON SO MANY
DEALERS ARE TAKING ON
THE ROUND OAK LINE



HERE'S a revolutionary new combination range for gas and coal or wood. Has two complete ovens. Actually two ranges in one! Opens rich rural and suburban markets for dealers in every section of the country

MANY MODELS

And there are ten other outstanding Round Oak gas ranges...designed and priced to meet every need. All are FACTORY BUILT for tank or bottled gas. A great line in every respect. Write for facts!



Open view of new Hiawatha Combination Range.

ROUND OAK

of Dowagiac, Mich.

STOVES • RANGES • FURNACES • OIL
BURNERS • AIR CONDITIONERS • STOKERS

Round Oak Co., Dowagiac, Mich. Dept. BP-5
Send me the facts on Round Oak ranges today!

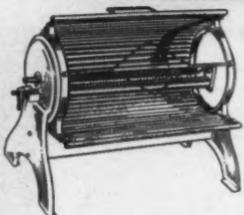
Name _____

Address _____

City _____ State _____

HUMPHREY

Quality Appliances for
BUTANE • PROPANE



The
HUMPHREY
RAFIRE

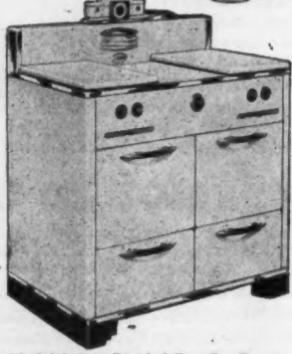
A Portable, radiant type heater that is amazingly different.

Sell the New, Low Priced Humphrey RAFIRE — the radiant heater with the unbreakable CHROMEL element. Smartly styled and durably built. Write today for complete literature.

GENERAL GAS LIGHT CO.
KALAMAZOO, MICHIGAN

APPROVED GAS RANGES FOR
LIQUEFIED PETROLEUM GAS

CROWN



Model 135-04 Divided Top Gas Range

Write Today for Catalog Showing
Complete Line

CROWN STOVE WORKS
4627-35 W. 12th Place Chicago, Illinois

**Oklahoma Butane Gas Co.
Celebrates In New Offices**

The public was invited to an open house on Saturday, March 30, by the Oklahoma Butane Gas Co., celebrating the opening of its new sales and general office, at 515 Robinson Ave., Oklahoma City, Okla. (Sales room photo below.)

About 250 patrons and prospective customers of the company, which is owned and operated by C. J. Nicklas, attended the all-day opening. In the show room, which was decorated for the occasion with flowers and potted plants, were displayed



C. J. Nicklas, owner of the Oklahoma Butane Gas Co., showing a modern butane gas range to a customer.

leading lines of the latest appliances for butane gas.

The guests, many of them housewives, witnessed cooking demonstrations on modern butane gas ranges. Factory sales representatives demonstrated the efficiency of the stoves by broiling steaks and baking rolled roasts directly on the grate without using a roaster pan. Butane was the only fuel used in the demonstration.



Butane Engine Will Replace Electric Pump Motor

J. A. Matasci, with 100 acres of beans to irrigate, has recently installed a butane engine to replace a 50-hp. electric pump motor that has been furnishing power in the past at his Greenfield, Calif., ranch.

A 3000-gal. storage tank for butane will give him ample fuel supply.

Weights, Measures Committee Will Work on New Code

A weights and measures committee was appointed at the April 3 meeting of the Pacific Coast Section of the Liquefied Petroleum Gas Association in Stockton to cooperate with the California Department of Agriculture, Division of Weights and Measures, in the formation of a code on metering and measuring.

Harold W. Wickstrom, Los Angeles, was named chairman of the committee, the other members being T. M. Penny, Smith Precision Products Co., South Pasadena; R. K. Lamont, Parkhill-Wade, Los Angeles; and P. F. Murphy, Ransome Co., Emeryville, Calif. A fifth member is to be selected by Chairman Wickstrom.



Edwin K. Priest Elected President of Moore Corp.

Edwin K. Priest, identified for many years with the stove industry, was elected president of The Moore Corp., Joliet, Ill., manufacturer of cooking and heating appliances, in March.

Mr. Priest was previously president and general manager of the Floyd-Wells Stove Co., Royersford, Pa., and is secretary-treasurer of the Institute of Cooking and Heating Appliance Manufacturers, a national trade association. He succeeds Milo B. Hopkins as president of the Moore Corp., who has become chairman of the board of directors.



Office and service truck of the North Webster Bottled Gas Co., North Webster, Ind., dealer for Dri-Gas.

SMITH METERS

GUARANTEED ACCURATE
THROUGH GREATEST
RANGE



Built expressly for metering liquefied petroleum gases, Smith Meters offer the efficient rotary principle combined with such quality features as 250 lbs. working pressure, built-in strainers, fast flow, minimum head loss and guaranteed sustained accuracy. Available in two models with horizontal or vertical dials, or horizontal Set Stop counter with or without ticket printer.

SMITH BUTANE DISPENSING UNIT

Combines vapor eliminator with accurate measuring. Compact design eliminates extensive piping and rack construction. Write for Bulletin No. 123, illustrating and describing Smith Butane Meters.

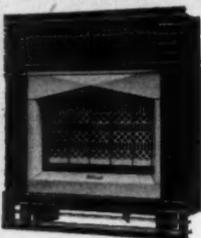
SMITH METER COMPANY

5743 East Leneve Street

Los Angeles

California

CIRKLAIR
GAS
HEATER
INSET
UNIT



A. G. A. APPROVED

CIRKLAIR GAS HEATER Inset Units (CI-1210 being shown in illustration) are A. G. A. Approved. These are the inset units used in CIRKLAIR Fireplace Insets, Consoles, Mantels, Wall Heaters and for special installations. Cirklaire Bathroom Heaters also are A. G. A. Approved.

Write for the interesting CIRKLAIR STORY.

CIRKLAIR PRODUCTS DIV.

The Folsom Co. "Since 1909"
509-15 Elm Dallas, Texas

The **CARTER** **OIL COMPANY**

Tulsa, Oklahoma
Manufacturers
and
Suppliers

of dehydrated

PROPANE and BUTANE

for the distributing and industrial trade. Shipping point: Seminole, Oklahoma.

Address inquiries to:

Marketing Department
Room 928, National Bank
of Tulsa Building
Tulsa, Oklahoma

Balanced Rotary Pump Perfected By Smith Precision Products

With their South Pasadena, Calif., plant on a full production basis, the Smith Precision Products Co., owned and operated by R. Stanley Smith, is now offering its new, balanced rotary pump for use in the LPG industry.

Thomas M. Penny, sales manager, states that their new 2-in. pump for general butane and propane purposes has been satisfactorily installed in a number of plants, as also has the original 3-in. pump.

Mr. Smith has been concerned in the development of a rotary pump for a number of years and his interest in this kind of equipment increased during his years with the A. O. Smith Corp., and also during the time he was developing the Smith rotary meter, now used for metering butane and propane.

The principal of the new Smith rotary pump is a perfectly balanced mechanism that will operate successfully without lubrication, according to Mr. Smith. He has been working on this idea for several years, he states, resulting in the perfecting of it in this balanced rotary pump.



Philgas Dealers from 34 Towns Meet in Worthington, Minn.

Salesmen from three states gathered in Worthington, Minn., in late March to attend a Philgas convention sponsored by Worthington Gas, Inc., which has agencies in Minnesota, Iowa and South Dakota. There were 150 in attendance.

The meeting was a combination of sales conference, equipment display and service school, and ended with a banquet. Gas company officials stated that equipment sales exceeded those at the South Dakota state hardware convention held recently in Sioux Falls, usually accepted as standard guide to business conditions. So far, sales are far ahead of last year.

In the 18 months since Worthington Gas, Inc., was established, 2000 consumers have been signed up. Agencies have been located in 34 towns and there are 104 dealers in the 33 counties covered by the company's franchise.

Mississippi Contractor Uses Butane for Road Work

The following letter from F. S. Neely, general contractor of Canton, Miss., tells of the success he has had in using butane fuel for heavy duty work on Mississippi highways:

"I do about \$500,000 to \$600,000 worth of grading and drainage of highways each year, and during the past six years I have built about 150 miles of roads in this State for the U. S. Government and for the State of Mississippi.

"I am now operating all my draglines, tractors and light plants on butane—altogether, about 28 units from 140 hp. down. I do not use any trucks except for service, and these are on gas. Have been operating this way over six months and am sold upon this form.

"I make a saving on fuel cost over gas, Diesel or tractor fuel, and also a very large saving from theft by employees,

as they do not use butane in their passenger cars.

"I get better operation of my motors than I did with gas, Diesel or tractor fuel. The consumption is about the same as gas or tractor fuel; more than Diesel. I get more power with butane than with any of the others. Have some spark plug trouble and some trouble from burning rings and pistons, mostly with units I changed over myself. I am now buying new units equipped for butane at the factory.

"I use about 40,000 gals. of butane per month when weather is suitable for working."

◆ ◆

George Jeffery Gets Butane Permit

The town board of Winters, Calif., has granted to George Jeffery a permit to install a 3000-gal. butane storage tank within the city limits. He will serve trucks, tractors and domestic users.

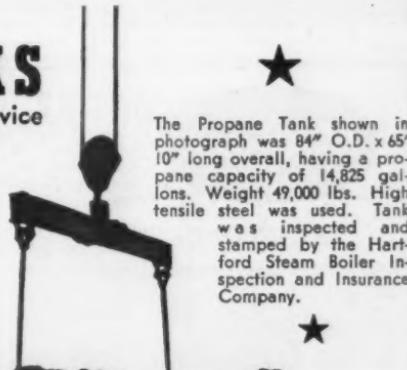
PROPANE TANKS

for Underground and Above-Ground Service

The proper design and fabrication of Tanks for Propane Storage is dependent upon the knowledge and experience of the fabricators.

Much depends upon their specifications for materials and their choice of procedure for handling them.

Because Downingtown have had considerable experience in building tanks for this service, we do know the answers to those basic problems. Let us help you with yours.



The Propane Tank shown in photograph was 84" O.D. x 65' 10" long overall, having a propane capacity of 14,825 gallons. Weight 49,000 lbs. High tensile steel was used. Tank was inspected and stamped by the Hartford Steam Boiler Inspection and Insurance Company.



DOWNINGTOWN IRON WORKS - Downingtown, Pa.



**The Most
Distinctive
Underground
Storage System
on the Market**

Manufactured by

**NATIONAL BUTANE
GAS COMPANY**
MEMPHIS, TENNESSEE
Write for Particulars



Complete stock
of Pressed Steel
I. C. C. Cylinders
in Los Angeles
for immediate
delivery.

ALWAYS IN STOCK
Butane Tank Fittings

Butane, Natural Gas Instruments,
Domestic Regulators, Pigtails, Tanks,
Gauges, Forged Brass Fittings, etc.

Pacific Coast Distributor
Drygas Butane Filters

AUTOMOTIVE INSTALLATIONS

We have made many of the largest automotive butane installations yet attempted in the L.P.G. field. Our bid and our work will please you.

**ELECTRIC AND CARBURETOR
ENGINEERING CO.**

"Pioneers of the Butane Industry"

2323 E. 8TH ST.

LOS ANGELES

**Standards Assn. Accepts More
Gas Appliance Approvals**

Recommended revisions to American Standard Approval and Listing Requirements for various gas appliances and accessories sponsored by the American Gas Association were adopted by the American Standards Association on Feb. 23. These revisions bring up to date practically all current major gas appliance standards. They will become effective January 1, 1941.

Among the approval requirements recently adopted as American Standard are those for central heating gas appliances, clothes dryers, domestic gas ranges, hot plates and laundry stoves, gas space heaters, and gas unit heaters. The new American Standard listing requirements cover conversion burners, automatic pilots, and gas appliance thermostats. In addition, new American Standard installation requirements for conversion burners were adopted by the American Standards Association.

In view of the large number of gas users who will be benefited, perhaps the most outstanding provisions incorporated in the new American Standards are those covering testing of central house heating appliances, space heaters, and unit heaters for use with bottled gases. As a result of satisfactory consumers' experience with domestic gas ranges and water heaters approved for use with these liquefied petroleum gases, there has been a corresponding increased demand for Laboratories' approval on other gas-burning equipment.

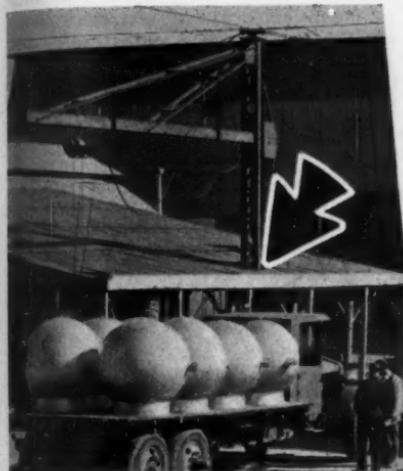
Among the specifications incorporated to safeguard consumers' interests are requirements for suitable marking to indicate clearly the gases for which the appliance was approved.



**Butane Co. Will Have LPG
Plant at Clarkdale, Ariz.**

The Butane Corp., of Phoenix, Ariz., has started construction of an LPG plant at Clarkdale, Ariz., for Harold Hopkins and J. W. Skousen, who will operate as the Butane Co. Shellane will be handled.

AMERICAN BUTANE and PRESSURE TANKS



Storage — Skid and Mobile Tanks
Household Bottles

Shown here is a shipment of eight of the new American Spherical Tanks for surface storage of butane gas, destined for New Mexico . . . Surface and underground tanks of all types and sizes fabricated from the best materials by experienced craftsmen . . . complete manufacturing and field service.

CIAC - API-ASME - ASME
—All Codes—

AMERICAN PIPE & STEEL
CORPORATION
Manufacturers and Distributors
Alhambra California



LEADERSHIP!

Quality - Safety - Economy

Butane-Propane tanks fabricated in strict accordance with the ASME code; API-ASME Code; Dept. of Public Safety, Commonwealth of Massachusetts; and National Board of Boiler & Pressure Vessel Inspectors regulations. Complete bulk plants designed, fabricated and installed by experienced men. Detailed information and estimates furnished without obligation.

Bulk Tanks - Skid Tanks - Truck Tanks

for

Butane * Propane
Butane-Propane Mixtures

LANCASTER IRON WORKS, INC.
LANCASTER PENNA.

18,000 Gallon Water — 15,000 Gallon Liquid
Propane Capacity Storage Tank 8'-0" - 1 1/16"
I. D. by 50' 5 1/4" long, 200 lbs. per square inch
working pressure.

SPRAGUE METERS

for

PROPANE-BUTANE SERVICE



Write for Particulars

SPRAGUE METER COMPANY

Bridgeport, Conn.

— PEERLESS — WALL HEATERS

are outstanding values for use
with Liquefied Petroleum Gas



TWO, THREE, FOUR AND
FIVE RADIANT SIZES

Available in both Standard Sanitary and
Crane Co. colors to match your bathroom

Write for Catalog

PEERLESS MFG. CORP.
LOUISVILLE, KENTUCKY

Line Strainer for Tank Trucks Announced by Granberg

A new line strainer for use on tank trucks is announced by Granberg Equipment Co., Inc., manufacturers of Gran-co pumps. The strainer is made in two models, for 1½" and 2-in. pipe. Both models are of solid bronze and may be equipped with either 1/16- or 1/8-in. mesh wire screens.

The 2-in. type has 21 sq. in. of screen; the 1½-in. model has 20 sq. in. They are specially designed for use on modern trucks.

Both models are compact and easy to install, and may be installed to clean from either top or bottom. Weights are 5 lbs. for the smaller strainer and 6½ lbs. for the larger one.



Users Will Receive Prizes For Suggesting Prospects

As the "Sales-a-Poppin'" campaign of Atlantic States Gas Co. draws to a close, Colonel Geo. A. Burrell is planning a customer's campaign as a new means for attracting live prospects into the orbit of his sales force.

When finally worked out, the details will include regional prizes to Atlantic States customers who turn in the most names of prospects resulting in sales of appliances so that the awards with their attendant good will may be widely distributed. There will be many prizes for each territory ranging from the first of \$50 down to \$5, \$2.50 and \$1 prizes.



William B. Scaife & Sons Co. Has Safety Chart for Trade

William B. Scaife & Sons Co. is distributing to the trade a wall chart entitled "How to Keep Your Customers from Kicking." Safety rules and instructions compose the text which covers handling, filling, and checking safety devices, with a filling density percentage table designed to prevent over-filling.

All the references are from various ICC safety regulations applicable to bottled gas.

THE BUTANE INDUSTRY LOOKS TO THE LEADER for
• Underground Tanks • Bulk Storage Tanks • Truck Tanks



STRICTLY

WHOLESALE



Our Tanks are designed and supervised by men with 20 years' experience in construction of containers for high grade pressure fuels.

A.S.M.E. CODE CONSTRUCTION

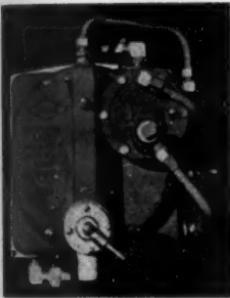
ECONOMY BUTANE-PROPANE SYSTEMS are constructed for 100.8 lb., 125 lb. and 175 lb. working pressure for underground use; 200 lb. working pressure for above ground. ALL ECONOMY SYSTEMS bear Underwriters' label and inspected by the Ocean Accident and Guarantee Corporation, Ltd.

Write, Phone or Wire for Complete Information!

DALLAS TANK & WELDING CO., INC.

"Tanks by Banks"

201-5 West Commerce Street ■ Dallas, Texas



Converter



Gas Air Mixer

"ALGAS"

PERFORMANCE

The L. P. G. Industry's choice for ALGAS butane, propane and natural gas carburetors is, of course, based primarily on performance. The equipment is fully guaranteed.

PROFIT

We have a proven non-obligatory sales plan for you, based on profit.

A Sales and Service Manual goes to each dealer. It is so complete and instructive, that the average mechanic can, QUICKLY, EASILY, and CORRECTLY make an installation. Dealerships solicited.

American Liquid Gas Corp.

1109 Santa Fe

Los Angeles

Nationwide Service

Guarantees constant and
convenient supply of

SHELL

Liquefied Petroleum Gas

SOUTHWESTERN
ENGINEERING COMPANY

GASOLINE PLANT EQUIPMENT

4800 Santa Fe Ave.
LOS ANGELES CALIFORNIA

BURNERS and TORCHES

Especially Designed
For Butane-Propane Gases
For All Purposes
with
Satisfaction Guaranteed

Write for Dealer Discounts

F & E MANUFACTURING CO.

507 - 55th Street, Oakland, Calif.

STOP BUTANE LEAKS WITH RECTORSEAL



Apply Rectorseal to every threaded or gasket connection on consumer tanks, bulk storage, and truck tanks. Rectorseal forms a plastic, elastic mass impervious to Butane, and all other fractions of petroleum. It makes a permanent leak-proof seal, yet permits easy break-out. Sold in 1 gal., 1/2 gal., 1 qt., 1 pt. and 1/2 pt. container sizes. A Product of Rector Well Equipment Co., Inc., Fort Worth, Texas.

RECTORSEAL

TRADE MARK REG. U. S. PAT. OFF.
THE POSITIVE LEAK PREVENTER

Pittsburgh Equitable Announces New Meter for Bulk Plants

The Pittsburgh Equitable Meter Co. has announced that the Pittsburgh Rotocycle Meter is now available in types and sizes for bulk plant and tank truck services. The Rotocycle, introduced several years ago, involved what is said to be an entirely new design principle in positive displacement measurement and was primarily manufactured for pipe line service. It spread to the refining and marketing branches of the industry, resulting in requests for the adaptation of the Rotocycle principle to a line of meters suitable for tank truck and bulk plant service.

Designated as a "packaged metering unit," the Pittsburgh Rotocycle tank truck unit incorporates a Rotocycle positive displacement meter complete with the necessary air eliminator and strainer. Optional positions for inlet and outlet connections simplify installation. A wide variety of registers is available for use on the meter, including the conventional horizontal setback, a new large counter horizontal setback, and the vertical dial two-hand type. The predetermined valve and "master meter duplicator" can be used in connection with any of these.

The Rotocycle is claimed to be the first positive displacement meter to have an operating mechanism consisting entirely of rotating parts. In this design, the measuring element, called the rotor, is turned with the moving stream by the pressure of the incoming fluid acting upon four half-moon shaped buckets, equidistantly spaced on its outer circumference. These buckets are geared together in a ratio of one-to-one on top of the rotor. As the rotor turns, the position of the buckets with relation to the side walls of the circular measuring chamber varies, always, however, so that two buckets are in position to form a closed compartment. Volume in this compartment is a definite displacement and a certain number of these displacements are counted and recorded for every gallon passing through the meter.

Bulletin No. OG-127, describing this meter for bulk plant and tank truck service may be had by writing the manufacturer, 400 N. Lexington Ave., Pittsburgh.

ADVERTISERS' INDEX

American Liquid Gas Corp.	101	Mallinckrodt Chemical Works....	90
American Meter Co.	6	McNamar Boiler & Tank Mfg. Co.	103
American Pipe and Steel Corp.	99	Merco Nordstrom Valve Co.	—
American Radiator & Standard Sanitary Corp.	47	Merit Water Heater Co.	103
Anchor Petroleum Co.	77	National Butane Gas Co.	98
Anderson Stove Co.	82	Pacific Gas Radiator Co.	88
Automatic Gas Equipment Co.	84	Parkhill-Wade	3
Bastian-Blessing Co., The.....	52, 53	Peerless Manufacturing Corp.	100
Blodgett Co., Inc., The G. S.	65	Philgas Department, Phillips Petroleum Co.	85
Brodie Co., Inc., Ralph M.	Fourth Cover	Pittsburgh Equitable Meter Co.	—
Bryant Heater Co. The.....	81	Pressed Steel Tank Co.	Second Cover
Butane Gas System Co.	—	Ransome Co.	67
Byron Jackson Co.	45	Rector Well Equipment Co., Inc.	102
Carter Oil Co.	96	Refinery Supply Co., The....	—
Chiksan Tool Co.	103	Reliable Gas Products Co.	—
Clow & Sons, James B.	103	Reliance Regulator Corp.	51
Comstock-Castle Stove Co.	43	Robbins & Myers, Inc.	59
Crown Stove Works.....	94	Robertshaw Thermostat Co.	71
Dallas Tank & Welding Co., Inc.	101	Rochester Manufacturing Co., Inc.	55
Day & Night Water Heater Co.	103	Roney, Inc., L. C.	92
Dearborn Stove Co.	—	Roper Corp., Geo. D.	57
Dix Manufacturing Co.	—	Round Oak Co.	93
Downington Iron Works.....	97	Ruud Manufacturing Co.	103
Electric & Carburetor Engrg. Co.	98	Scaife & Sons Co., Wm. B.	Third Cover
Ensign Carburetor Co., Ltd.	63	Servel, Inc.	73
F & E Manufacturing Co.	102	Shell Oil Co., Inc.	102
Fisher Governor Co.	91	Smith Meter Co.	95
Florence Stove Co.	1	Smith Precision Products Co.	83
Folsom Co., The.....	96	Southern Steel Co.	5
General Controls.....	92	Southwestern Engineering Co.	102
General Gas Light Co.	94	Sprague Meter Co.	100
Glo-Fire Co.	103	Standard Gas Equipment Corp.	69
Granberg Equipment, Inc.	89	Standard Oil Co. of California....	—
Handbook Butane-Propane Gases	74	Tappan Stove Co.	—
Hotstream Heater Co., The.....	76	Tennessee Enamel Mfg. Co.	49
Kerotest Manufacturing Co.	90	Viking Pump Co.	80
Lacy Manufacturing Co.	103	Ward Heater Co.	61
Lancaster Iron Works, Inc.	99	Warren Petroleum Corp.	88
		Wickstrom, Harold W.	—
		Wood Manufacturing Co., A. R.	—

SCAIFE



"SAFE"

IS PART OF OUR NAME!



If it's "SCAIFE-WELDED"
it's Safe!

The satisfaction you get from the use of Scaife Cylinders for your Bottled Gas is due largely to the confidence your trade has in Scaife products. Since 1802 Scaife has meant quality everywhere. So when you tell your customers you use Scaife Cylinders, you are telling them that they are getting the Best!



WM. B. SCAIFE & SONS CO.

General Offices & Works: OAKMONT, (Pittsburgh District) PA.

Representatives in Principal Cities

0
3
—
3
0
8
3
0
0
35
—
er
57
02
—
51
59
71
55
92
57
93
03
ver
73
02
95
83
5
02
00
69
—
49
80
61
88
—
News

... IN MEASURING BUTANE

WITH BRODIMATIC DIRECT ERROR-PROOF READINGS

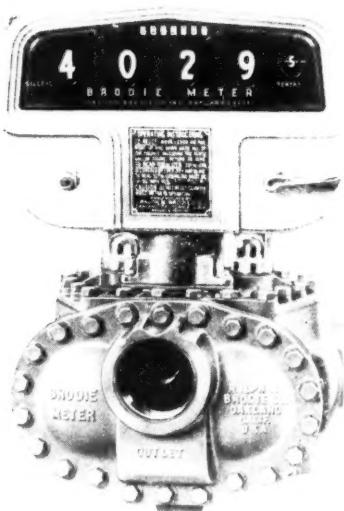
- Patented
"Snap Action"
Numerical
Change

- Large Legible
"Plain View"
Numbers

- Simple Direct
Totalized
Readings

- Eliminates
"Guessed at"
Totals

- Space Saving
Compactness



With just one look or simply a glance, you'll have the right answer, for there's only one total—one answer, when Butane deliveries are measured with Brodie Meters and high-distance-spanning Brodimatic totalized readings. Brodimatic Direct Reading Counters are fully error-proofed. They eliminate "guessed-at totals," dial computations and mental calculations.

Write today for full details.

RALPH N. BRODIE CO., INC.
945 61st Street, OAKLAND, CALIF. U.S.A. Cable
Address: "BRODICO" • Division Office: Chrysler
Building, NEW YORK CITY • 59 East Van Buren,
CHICAGO • 2809 Canton Street, DALLAS, TEXAS
Representatives and Stocks in All Principal Cities

**BRODIE
METERS**

BRODIMATIC

DIRECT READING